The·Northwestern·Miller

MAY 13, 1942

MILLING PRODUCTION SECTION

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Production Highlights

CONVENTIONING.—There's a sharper tone this year in the programs of conventions attended by men whose responsibility rests in the field of grain storage and processing. That tone was sounded at the annual meeting of the Society of Grain Elevator Superintendents in Omaha last month, and it will be echoed by cereal chemists and operative millers when their organizations meet in the near future. Responsible for it is this fact: grain and its products are obviously of the highest importance to victory. And grain must be stored and processed at maximum efficiency under conditions that tend to lower the speed and economy of such handling. . . . The grain men, the millers and the chemists all have different jobs and separate problems. Those of the laboratory will be considered in Chicago by the American Association of Cereal Chemists the week of May 18. The Association of Operative Millers will investigate those of flour production at the millers' annual convention, to be held in Seattle, Washington, June 1-5. Here are the principal points of their program:

Monday, the opening day, will as usual be informal. Because operatives are generally unable to see each other often, they enjoy airing their problems in "lobby discussions." It's an old A.O.M tradition. Monday, too, affords the best time for inspection of exhibits. The past year has brought several developments that some operatives have traveled many miles to see at work in mills: others will view them in Seattle. . . . Tuesday will start the regular sessions, at which the following main topics will be introduced by these speakers: "Some Principles Governing the Tempering of Wheat," Professor W. L. Beuschlein, University of Washington; "Washing Wheat with a Centrifuge," A. J. King, Fisher Flouring Mills Co., Seattle; "Present Emergency Investigations," H. B. Fletcher, Federal Bureau of Investigation; "Nutritional Problems Today," Dr. Jennie Irene Rowntree, University of Washington; "A Review of the Vitamins," James M. Doty, Merck & Co., Inc; "The Flour Enrichment Program," W. L. Haley, Fisher Flouring Mills Co; "The Milling of Natural High-Vitamin Flour," R. W. Bouskill, Western Canada Flour Mills Co., Ltd., Winnipeg, Man; "The Importance of Grain Statistics to the Miller," H. C. R. Stewart, U. S. Department of Agriculture; "Wheat Improvement in the Pacific Northwest," Dr. S. P. Swenson, State College of Washington; "The Biology of Insects Infesting Grain and Grain Products," Dr. Melville H. Hatch, University of Washington. An open forum on the wheat improvement program will be led by R. E. McMillen, of the Sperry Flour Company, Spokane. General open discussions will be led by Carl Grier, General Mills, Inc., Minneapolis, and W. N. Smith, Montana Flour Mills Co., Great Falls. Donald S. Eber and George Walker, both of the Crown Mills, Portland, will speak about association activities, and there will, of course, be adequate entertainment for both feminine and masculine visitors, culminating with a banquet on Thursday evening.

Horace G. Kohler, President of the Association of Operative Millers

The A.O.M. convention has never before been west of Denver. However, in recent years the growth of an A. O. M. district — No. 11 — on the Pacific Coast has brought that area into the convention picture. Of the convention, and of the district which will be its host, Horace G. Kohler, president of the A.O. M. and superintendent for the Fuhrer-Ford Milling Co., Mount Vernon, Ind., has this to say:

"Members and friends of the Association of Operative Millers are now thinking of the annual convention but a short time away. This year Seattle will be the host city—a tribute to the many loyal members of the Pacific Coast District who have each year contributed so much to our conventions.

"Because of the war and the distance of travel many millers are debating whether or not to attend. You may know, but it is worth repeating, that our government not only approves but encourages gatherings of this kind. Regarding this specific meeting at Seattle, a representative of the government has given assurance of approval. As for the distance of travel, we must remember it is no farther from Buffalo or Chicago to Seattle than it is from Seattle to Chicago or Buffalo; our Seattle friends have been making these trips every year.

"Plans are being made for a large attendance with plenty of entertainment and a very fine technical program. Convention Chairman Dewey Robbins and his committee are enthusiastic about the prospects for one of our best conventions, and when one considers the many unusual attractions of this beautiful country and the large attendance at district meetings on the coast, this can easily be understood.

"This is the first annual convention to be held on the Pacific Coast, and the members of that district are doing everything possible to make it an outstanding meeting—one that will be long remembered by everyone in attendance.

"It will have been a year since we have seen some of our good friends of the milling industry. We know that if we miss this meeting it will be at least another year before we can hope to meet them again. But the pleasure of meeting these friends again, of renewing old acquaintances and making new friends, is secondary to the definite need to meet and exchange ideas that will help us fulfill the demands to be made upon the productive capacity of the milling industry.

"Let's make our slogan, 'Seattle, here we come!'"

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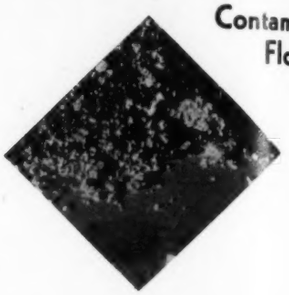
ASSOCIATION
of
OPERATIVE MILLERS
Annual Convention
Seattle, Wash. June 1-5

LOSS or PROFIT?

This — or THIS?

Contaminated Flour



Without infestation there will be no contamination. With the FORSTER "INSURATOR" on the job, freedom from the *cause* of insect infestation is assured.

The absence of insects in flour WILL NOT BE accepted as evidence of purity and wholesomeness by the F. D. A. The safe way is to STOP INFESTATION BEFORE IT STARTS! The FORSTER "INSURATOR" is positive insurance!

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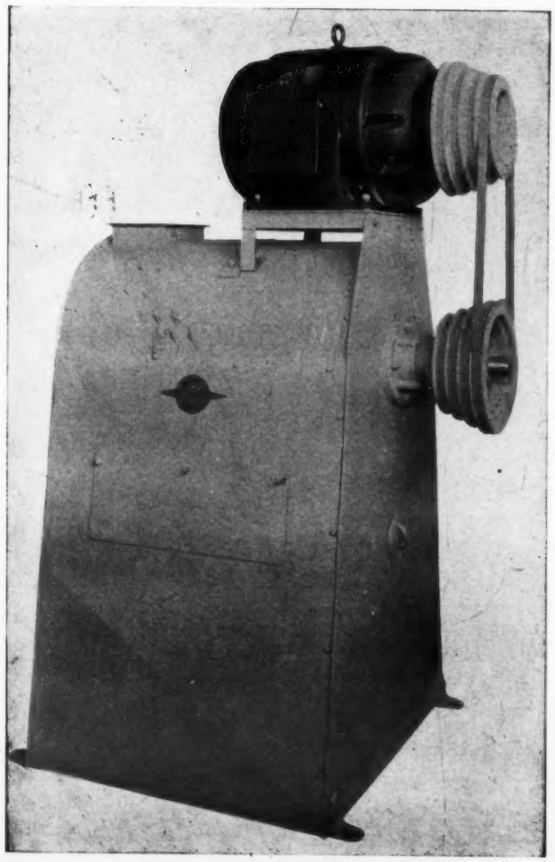

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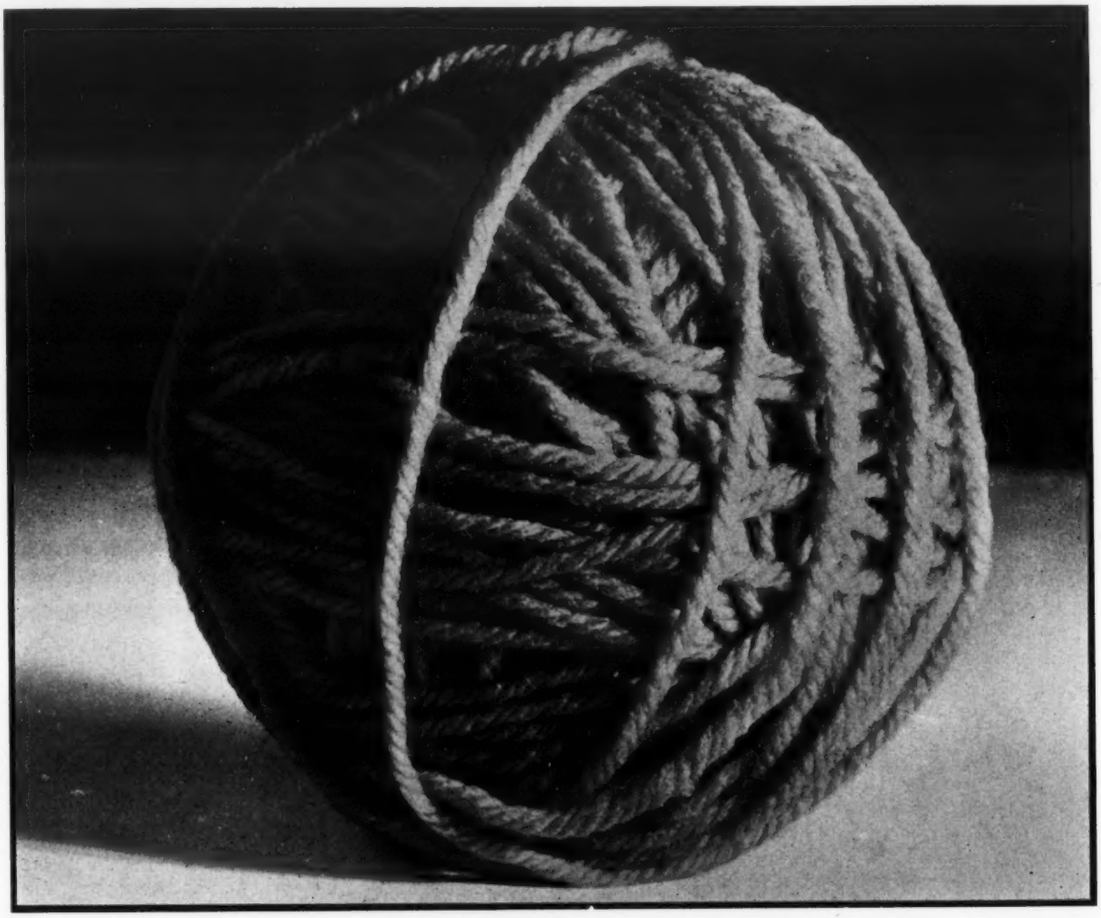


A ball of yarn—and the uncoiled strand from which it is made—furnish a pertinent illustration of how the surface areas of components in flour are increased many times through subdivision. It is this large amount of surface area that makes white bread so digestible—and so popular.

SUBDIVISION IN MILLING

BY C. O. SWANSON

Kansas State College, Manhattan, Kansas

MILLING may be considered as a process of increasing surface area by dividing the endosperm of the wheat into flour particles which have a much larger surface area than the wheat kernel itself. The existence of this large surface area in flour is an important factor in the absorption of water, which makes possible the unique characteristics of dough. Raising this dough by yeast and baking it into bread results in a further increase of surface. This large surface area in proportion to mass is one factor which makes bread a food so important to the human race that it has long been called "the Staff of Life."

How the dividing of a solid into smaller units results in an increase of surface may be illustrated by slicing bread. A rectangular loaf of bread 4x4x20" has a total surface of 332 sq inches. Each time a slice 4 inches square is cut, the surface is increased by 32 sq in, and if the loaf is cut into 30 slices the total surface of the slices will be 1,280 sq in, or nearly four times as great as that of the loaf.

Because milling divides the wheat kernel into so many small flour particles, the process increases the surface. A dough which has a volume of about 53 cu in will bake a loaf of bread whose volume is about 320 cu in.

Cooking foods not only tenderizes them greatly but increases the surface area tremendously. Witness the large increase in volume of a starchy food due to the gelatinization of starch. The comparatively small starch granule is permeated by water which covers the starch molecules and thus forms large areas of starch-water interfaces upon which the digestive enzymes may act. One purpose of chewing food is to prepare a larger surface for the action of the enzymes of digestion. Enzyme reactions take place at surfaces, and the

more surface, the better their performance. People with digestive weaknesses can often find relief in more careful mastication of food.

How the total area of surface increases when a body is divided into smaller units can be demonstrated by the progressive subdivision of a cube into smaller cubes. A cube whose edge is one centimeter has a total surface area of six square centimeters. If this cube is divided into smaller cubes whose edges are 0.1 cm, each face will be .1×.1=.01 sq cm and the six faces will have an area of .06 sq cm. And since there are 1,000 such cubes, the total surface area will be 1,000×.06, or 6 sq cm. This points to the principle that if a cube is divided into smaller cubes each having edges 1/10 as long as those of the original, then the total surface area of the smaller cubes will be 10 times as large as the surface of the larger cube.

In dealing with such small units as flour particles, starch granules, or even molecules, it is convenient to use the metric and micro-metric system. (For reference see "Studies in Practical Milling," pages 459-61, by Edgar S. Miller.) The units for small lengths are centimeter, which equals 0.3937 inch, and millimeter, equal to 0.1 centimeter. One inch is equal to 25.4 millimeters. The millimeter is too large a unit when measuring starch granules. For this the micron (one thousandth of a millimeter) is convenient. For molecules the millimicron, which is one thousandth of a micron, or one millionth of a millimeter, is used.

Progressive Increase in Surface Area on Subdivision

Total surface	Length of edge	No. of cubes
6 sq cm	1 cm	1 .....
60 sq cm	1 mm	10^3 .....
600 sq cm	.1 mm	10^6 .....
6,000 sq cm	.01 mm	10^9 .....
60,000 sq cm	1 micron	10^{12} .....
600,000 sq cm	.1 micron	10^{15} .....

How the surface area increases on the progressive subdivision of a cube is illustrated in the accompanying tabulation.

Increase of surface can also be affected by elongation. For a given volume, the cube and the sphere have lesser surface areas than the same volume would have in any other shapes. Any departure from these shapes increases the surface area. Thus, if a cube whose surface area is six sq cm is changed into a rod of .1 cm cross section, the length will be 100 cm and the total surface area will be 40.2 sq cm. A similar increase in surface takes place when a sphere is changed into a thread. Starch granules are spheroidal, and thus have a much smaller surface than protein material, which is more fibrous in structure. This is one reason for the larger absorptive capacity of high protein flour as compared with low protein flour.

* *

The average measurements of a number of wheat kernels gave a diameter of 2.6 mm and a length of 5.4 mm. The diameter of a medium size flour particle is near 0.1 mm. This means that 54 flour particles placed in a row would equal the length of one average kernel and 26 would equal the diameter.

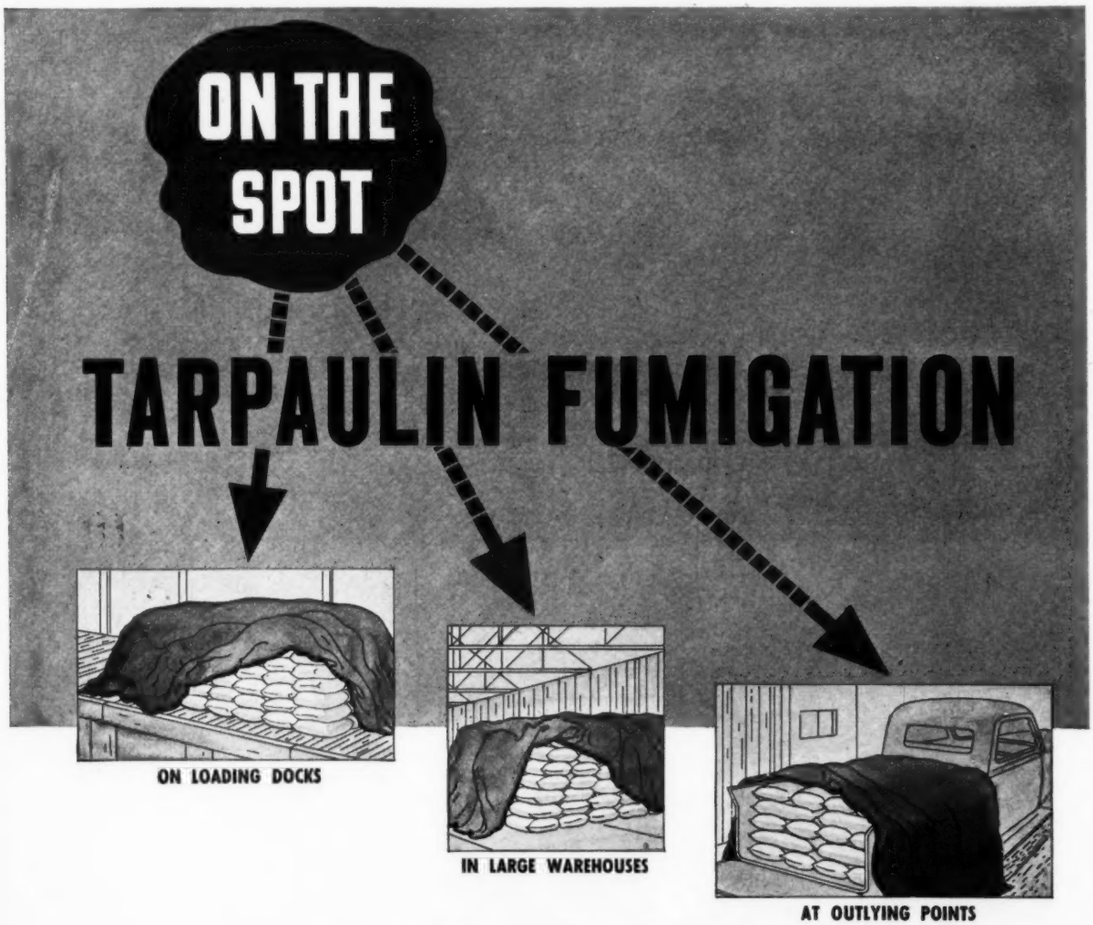
Bailey (1938) found that the average weight of American wheat kernels was 25.3 milligrams. Since the average flour extraction is about 72%, the flour from an average kernel would weigh 17.2 mg. Swanson (1937) calculated that 5 mg of flour may have 8,330 particles. On this basis the possible number of flour particles from a kernel would be about 25,000. These would have an enormous surface area compared to the original kernel.

All these figures are concerned only with the outside surface areas of the flour particles, but there are also the interior surfaces to be considered. In a previous article (Swanson, 1942) it was stated that surface areas of starch granules average about 2,000 sq cm per gram of starch. The surface area of the protein in the flour particles is larger per unit weight because of the fibrillar structure. Thus the intra-surfaces of starch granules and protein material of the flour particle are much larger than the exterior surface.

The preceding shows that it is not only the external surface which is important but also the interior surface. This large interior surface can be illustrated with bread. A small loaf of bread such as is obtained in experimental baking may have a volume of 1,000 cu cm. If this is in the form of a cube, each edge would be 10 cm long and the outside surface would be 10×10×6, or 600 sq cm, since each of the six faces is 10×10, or 100 sq cm. The sizes of the pores in bread vary so enormously that average estimates are difficult, but for purposes of calculation we may assume a one-millimeter cross section, or a space of one cubic millimeter whose internal surface would be 6 sq mm. Since the edge of the loaf is 100 mm, there would be 1,000,000 cubic spaces whose total internal surface area would be 6,000,000 sq mm.

This assumption at first seemed erroneous because it leaves no space for the cell walls themselves However, since these are not solid, but themselves have pores which mean more surface, the above assumption of total possible

(Continued on page 26a.)



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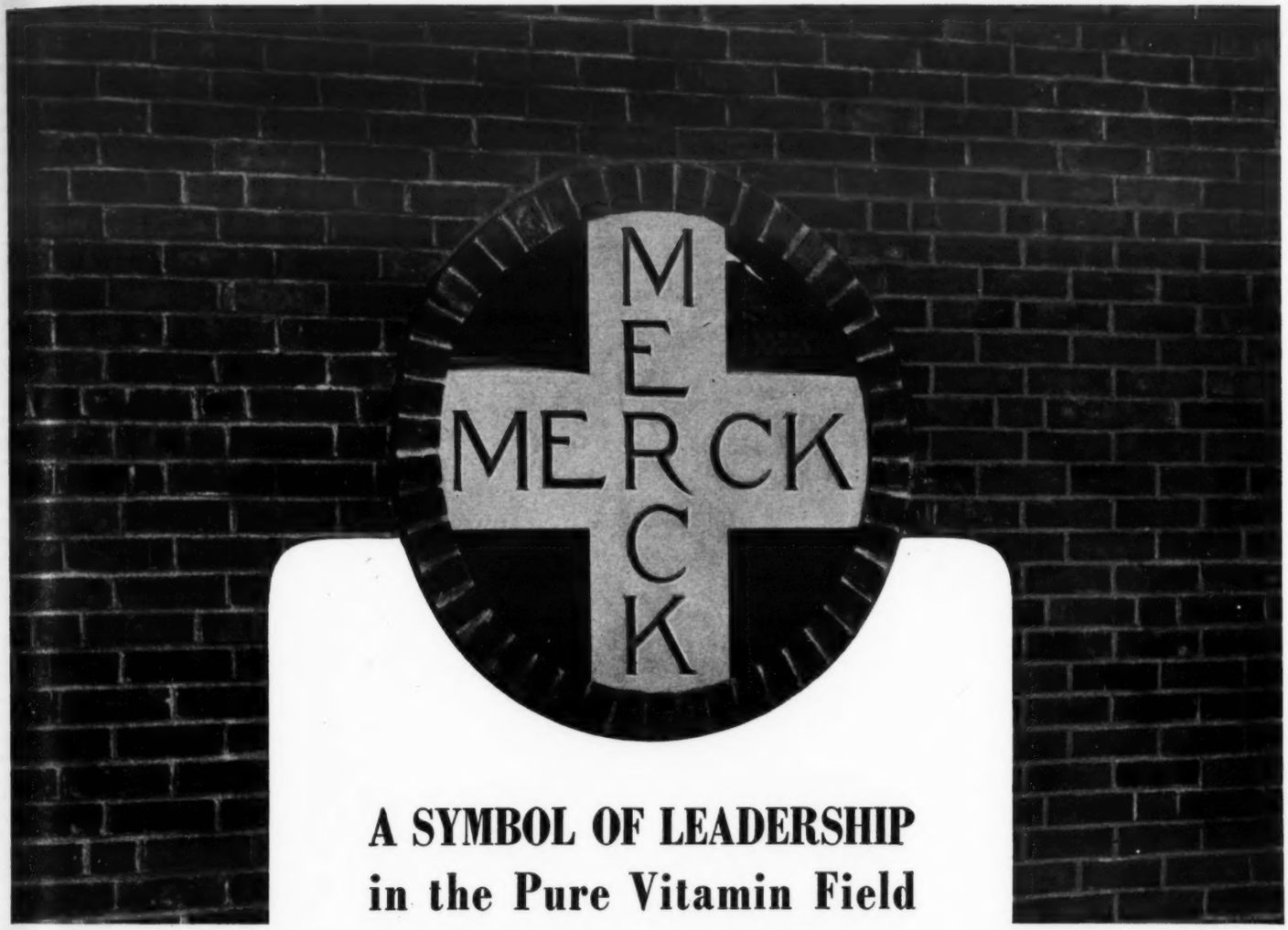


A SYMBOL OF LEADERSHIP in the Pure Vitamin Field

Ever since the first of the pure vitamins (ascorbic acid) was synthesized in 1934, the name Merck has been identified with leadership in the synthesis, development, and production of these vitally important substances.

The growing list of Merck contributions in this field emphasizes the outstanding rôle being played by Merck chemists and their collaborators in making available pure vitamins of known and uniform potency.

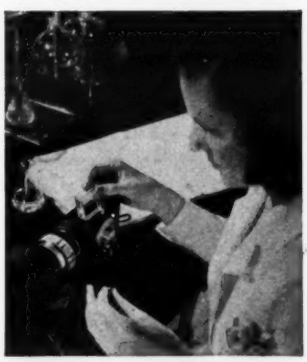
As the foremost manufacturer of pure vitamins and minerals, Merck & Co. Inc. offers the miller an established and dependable source of enrichment ingredients.

Backed by thorough experience, extensive resources, modern and rapidly-expanding production facilities we are prepared to serve the milling industry in furthering the enrichment program.

Our scientific staff and laboratories are prepared to serve you.

Catalytic Synthesis in Vapor Phase

Isolation of a Vitamin



Chemical Assay of Vitamin B_1

Analytical Test in Vitamin Procedure

MERCK PURE VITAMINS

VITAMIN B_1
(Thiamine Hydrochloride)

RIBOFLAVIN
(Vitamin B_2)

NIACIN
(Nicotinic Acid)

NIACIN AMIDE
(Nicotinic Acid Amide)

VITAMIN B_6 HYDROCHLORIDE
(Pyridoxine Hydrochloride)

CALCIUM PANTOTHENATE DEXTROROTATORY

ASCORBIC ACID
(Vitamin C)

VITAMIN K_1
(2-Methyl-3-Phytyl-1, 4-Naphthoquinone)

2-METHYL-NAPHTHOQUINONE
(Menadione)
(Vitamin K Active)

ALPHA-TOCOPHEROL
(Vitamin E)

MERCK & CO. Inc. *Manufacturing Chemists* **RAHWAY, N. J.**

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A Canadian View of High-Vitamin Flours

THE early part of this valuable contribution to the literature of flour milling is devoted to a review of the findings of prominent nutritionists in the field of vitamin research. After pointing out that the deficiencies of white flour in vitamin potency are well recognized and not disputed, attention is called to the fact the per capita consumption of refined sugar in Canada amounts to about 100 lbs, supplying approximately 20% of the average calorie intake, and that no vitamins of any kind are available from this sugar. The per capita consumption of white flour is given as 7½ oz per day, or just about 169 lbs per year. It is thus shown that the deficiencies of the B vitamins in white flour and sugar, which together supplied about one half the calorie needs of the average Canadian, must be accounted for largely through their entire absence in sugar, even though the white flour consumed has not contained vitamins in sufficient quantity to "carry" its own carbohydrates.

"The realization of the inadequacy of our diets with respect to thiamin and, to a lesser extent, riboflavin and nicotinic acid," say the authors, "naturally led to inquiries as to the best methods for making good these deficiencies.

This material is based upon a paper by A. W. Alcock, chief chemist for the Western Canada Flour Mills Co., Ltd., Winnipeg, Man., and R. K. Larmour, Department of Chemistry, University of Saskatchewan. It was published in *Canadian Chemistry and Process Industries.*

Since wheat flour is our most important energy food, attention was soon focused on this material." Noting that it has been known for some time that whole wheat is much richer in thiamin and nicotinic acid than white flour, it is suggested that the substitution of whole wheat flour for white flour would seem to be a simple and rational means of increasing our consumption of these two vitamins. Such a step, it is stated, would also slightly increase the intake of riboflavin and other B vitamins, known and unknown, which are more concentrated in wheat than in flour.

Commenting, however, upon the century-old effort of food reformers—"scientific and otherwise"—to popularize the consumption of whole wheat flour, and the conspicuous absence of success in any noticeable degree, the authors then offer some sidelights on the situation in Great Britain during the two years or so last past. It is very probable that many who are deeply interested in the "enrichment" program just getting into full swing in the United States have not kept themselves fully informed in regard to this development, and what Drs. Alcock and Larmour say about it will doubtless be of considerable value in helping get "straightened out." The following is direct quotation:

THIAMIN-ENRICHED WHITE FLOUR IN BRITAIN

Because educational efforts to change deep-rooted habits are so unsuccessful, the practice of adding to staple foods essential minerals and vitamins in which the diet is believed to be deficient has been widely supported by scientific nutritionists. For years now, iodized salt and vitamin D milk have been in common use. Cowgill [in the *Journal of the American Medical Association*, in 1939] recommended the addition of thiamin to white flour; and in 1940 the British Food Ministry announced that all white flour used in Great Britain would be enriched with thiamin as soon as the vitamin could be produced in the required amounts. This step was taken on the recommendation of the scientific advisers of the ministry, and was based on the recognition that a suboptimal intake of thiamin gives rise to depression and anxiety and causes fatigue and lack of energy.

Since the end of May, 1941, thiamin has been added to all the flour milled in Canada for shipment to Britain. The amount added is small, only slightly more than 70 mg to 100 lbs of flour. The grade of flour purchased from Canada by the British government has a natural thiamin content of about 1.6 micrograms per gram [approximately 243 I.U. per lb]. This figure is raised to a little above 3 micrograms per gram [456 I.U. per lb] by the addition of synthetic thiamin. The thiamin content of the enriched flour is still considerably below that of whole wheat, which runs in the neighborhood of 5 micrograms per gram, but, according to in-

HOW LONG SINCE YOU LAST PEEKED IN YOUR CUSTOMERS' POCKETBOOKS?

SOMETHING seems to be happening to flour markets!

Steadily and surely the sales of pre-leavened specialty flours have been increasing in recent years . . . until today more housewives than ever before are using such profitable specialties as biscuit mixes, pancake flours, waffle flours and self-rising cake flours.

Now income levels throughout the nation are climbing, and this growing market promises to grow still faster . . . as still more housewives find the money in their pocketbooks to buy specialty flours.

If you are already selling this profitable market, don't those facts indicate that now is the time to put still more effort in your sales approach?

Or if your line does *not* include any specialties, don't those facts indicate that now is the time to investigate the increasing profit possibilities they reveal?

You will find that recent years have brought consistent improvements in specialty flours . . . so that today you can offer your customers a better, more uniform product than ever before. And you will find that Monsanto is an excellent place to start your investigation. Here the knowledge gained from sixty-five years of experience in the leavening field and one of the oldest and best-equipped baking laboratories in the industry are at your service!

Monsanto is the manufacturer of HT Phosphate . . . made from Monsanto-produced pure phosphoric acid and heart-of-the-vein food-grade lime . . . and long known for: ✓ HIGH TEST PURITY ✓ UNIFORM NEUTRALIZING STRENGTH ✓ CORRECT GRANULATION ✓ FREE FLOWING QUALITIES. MONSANTO CHEMICAL COMPANY, Phosphate Division, St. Louis, Missouri.

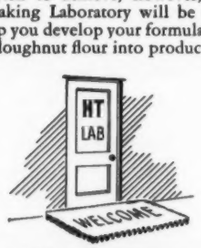
HT phosphate

HOW ABOUT A DOUGHNUT FLOUR?

Ready mixed flours for doughnuts may be compounded to cover a wide range of ingredients, but the basic ingredients are: flour, sugar, shortening, milk, eggs, salt, flavoring, and leavening.

The consistency, flavor and richness of a doughnut are affected by the flour mixture, the granulation and amount of sugar added, the shortening, the leavening and method of preparation. Because a good doughnut in Peoria is not necessarily considered a good doughnut in La Jolla or Syracuse, the tastes of your customers as well as the particular types of flour your plants use must be considered in developing your particular formula.

Given samples of the flour you wish to use and a clear idea of the results you wish to achieve, however, the HT Baking Laboratory will be glad to help you develop your formula and get a doughnut flour into production.



The first baking laboratory ever established by a phosphate producer to serve the milling industry, the HT Laboratory has been helping millers solve their leavening problems for twenty years. It has recently been enlarged and much new equipment has been added. Its staff of trained baking chemists are authorities in their field with long milling experience to their credit.

formation supplied to Canadian millers, the use of thiamin will possibly be increased as facilities for manufacturing the vitamin in Great Britain are extended. The present addition adds about 6½c to the cost of 100 lbs of flour.

LONG-EXTRACTION FLOUR IN BRITAIN

On the recommendation of a committee representing the Medical Research Council and the Lister Institute, the consumption of what is called "National Wheatmeal" flour containing part of the bran, and therefore between white flour and whole wheat flour in color and general character, is also being encouraged in Great Britain. This product represents 85% of the wheat and contains between 3 and 4 micrograms of thiamin per gram. It is therefore at least equal to the present "fortified" white flour in thiamin content, and if also contains larger amounts of the other B vitamins. In spite of this, there is little hope that the darker flour will prove acceptable to British consumers. At the end of September, 1941, Major Lloyd George stated in the House of Commons that the output of national wheatmeal bread was then estimated to be about 7½% of all bread consumed (a statement in the journal, *Milling*, Oct. 4, 1941).

A few years ago, an attempt was made in Switzerland to popularize a similar flour. As a result of the efforts of the Swiss government and its nutrition specialists, together with a substantial subsidy, the consumption of the 85% flour reached a high level. But this was only for a very brief period After reaching a peak, the use of the flour rapidly declined until it constituted less than 10% of the total consumption. [The Swiss experiment was studied by Dr. Bailey, University of Minnesota, who provided the authors with the above information.]

The British Medical Research Committee considered the 85% flour to be preferable to flours carrying larger amounts of bran, because it contained less indigestible material and less phytic acid—a substance with which calcium combines to form a compound which cannot be absorbed by the body. Even the 85% flour contains appreciably more phytic acid than white flour and, to offset this, the committee recommended the addition of calcium carbonate to the flour.

v v

Some little consideration is then given to the objection of Canadian nutritionists to the addition of synthetic vitamins to flour, "which does not appear to be widely held by specialists in the field of nutrition outside Canada," and an opportunity to compare some of the arguments with the opinions of leading medical authorities in the United States is offered. Then is pointed out that Canadian authorities do not think it would be possible to popularize even the 85% wheatmeal bread recommended by the Medical Research Committee in Great Britain. Because of this belief, the Canadian Department of Health has set up standards for "Vitamin B White Flour (Canada Approved)" with a natural thiamin content of 400 I.U. per lb.

Relative to the milling of flours of this type, the authors call attention to the fact that the B vitamins are not evenly distributed throughout the kernel. Calculations indicate that the endosperm, from which white flour is made, contains about 25% of the total thiamin of the berry, the germ about 15% and the bran about 60%. By a table presented it is shown that a flour representing 77% of the entire berry (the missing 15% being supposedly bran and germ) is not sufficiently high in vitamins to meet the requirements of the Canadian nutritionists, and it is suggested that in order to bring it up "some 2 to 3% of dark-colored material having very poor baking qualities and containing approximately 30 micrograms of thiamin per gram" (about 4,500 I.U. per lb) might be introduced. "The addition of this material to the flour," it is stated, "produces what is called 'long extraction flour,' representing approximately 80% of the kernel and containing in the neighborhood of 2.6 micrograms of thiamin per gram [395 I.U. per lb]. The adoption of this method would necessitate the lowering of the present legal standards for millfeed sold in Canada."

American millers have entertained some curiosity concerning a rumor that satisfactory "Vitamin B White Flour (Canada Approved)" was being made by the simple expedient of grinding the mill-mix dry, and the comments of the authors with respect to this are more than a little interesting. They follow:

Newman and his associates in the Department of Agriculture, Ottawa, suggested that flour having the required amount of thiamin might be made by milling wheat low in moisture. Under these conditions, the bran, and especially the inner layers, is more readily reduced to a powder during the grinding operations. Any finely powdered bran thus produced passes through the bolting silks and increases the vitamin content of the flour. By this method, a

(Continued on page 16a.)

You can't stop a Tank with Buckshot!

. . . and you can't stop beetle and weevil with cheap fly spray. You need a weapon with more deadly power—power to penetrate the waxy armor of the insect's body—power to kill. In short, you need an insecticide made to kill insects in a flour mill—not compounded to kill flies in a dairy.

When you use an ineffective fly spray, you kill only the weakest bugs. Those that survive grow tough and produce generations of "super-bugs"—more highly resistant to insecticides, and harder than ever to kill.

That's why you cannot afford to use anything but an insecticide like Dr. Loebel's. For Dr. Loebel's has proved itself 40% more effective than fly sprays when used against crawling insects—proved itself not only in 1100 impartial tests by a great university*, but also over 15 years of constant use under the most difficult infestation conditions. That is why you can be absolutely sure that Dr. Loebel's will kill crawling insects in all stages of development.

Remember, Dr. Loebel's is not dangerously flammable, and it is non-poisonous and odorless.

Furthermore, you can prove the effectiveness of Dr. Loebel's in your own mill —at our expense. Simply order a drum of Dr. Loebel's and use it as instructed. If, after 30 days, you are not fully satisfied, return the unused portion and we will cancel your invoice.

In your battle against crawling mill insects, put a weapon in your hands with power enough to kill weevil and beetle. Switch to Dr. Loebel's now and be sure. A single test in your mill will convince you that it's one of the most effective spray insecticides you've ever used.

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DR. LOEBEL'S
MILL SPRAY INSECTICIDE

MILLER'S RELIEF

Used once every three weeks, this heavier-than-air gas fumigant keeps milling machinery units insect-free. No other machinery fumigation is needed.

FOR INSECT CONTROL WITHIN MILLING UNITS

Superintendents' Convention Provides a Guide to Increase the Tempo of Grain Handling

By Richard E. Miller
Assistant Technical Editor of THE NORTHWESTERN MILLER

THESE facts were paramount in the minds of the men who attended the annual convention of the Society of Grain Elevator Superintendents in Omaha, Neb., April 9-11: the grain storage industry is faced with its greatest job—the preservation and transportation of food vital to the war program; and that job must be carried on with inadequate "tools." Unprecedented problems of operation are created by the huge grain stocks that put teeth in the words, "Food will win the war and write the peace," for the transportation facilities of the nation are already strained in many directions and available storage space is the lowest it has been in years. Retarding the building of new storage is the tremendous demand for building materials in many phases of the war program.

But regardless of the magnitude of the task ahead, the superintendents who met at the Hotel Paxton last month were determined to accomplish it. Their convention program was centered upon a study of the ways in which the job could and would be done. They pledged themselves to the utmost efficiency in the handling of grain to ease the transportation burden. They reviewed the priority picture and made plans to strengthen their programs of maintenance to get the last bit of good out of every piece of equipment. They heard discussions of sabotage, and went away with information that would aid them in the establishment of plant protection programs —protection against fire, dust explosions and even bombings. They devoted a large share of their meeting to a consideration of safety—a subject of constant importance to grain elevator men,

The only monotonous thing about the superintendents' Omaha convention was the angle from which these pictures of speakers were taken. At the top is Harry Clark, chief weighmaster for the Omaha Grain Exchange, who was head of the convention committee. Reading down the line are Herbert Brand, Quaker Oats Co., Cedar Rapids, Iowa, new second vice president; R. M. Scoular, president of the Omaha Grain Exchange; Vincent Shea, Van Dusen Harrington Co., Minneapolis; James Doty, Merck & Co., Inc., Omaha, and T. C. Manning, Uhlmann Grain Co., Kansas City.

as is witnessed by the cups shown on the opposite page, which were awarded to superintendents of elevators for outstanding records in the society's annual safety contest. Then they turned to regular operating problems that always have a part on their convention programs. And finally they considered such borderline subjects as grain chemurgy, enrichment of flour and bread, personnel work and grain improvement.

Paul Christensen, general superintendent for Van Dusen Harrington Co., Minneapolis, and retiring president of the society, shared the task of presiding over opening sessions with Gilbert Lane, superintendent for the Arcady Farms Milling Co., Chicago. Mr. Christensen praised the Omaha-Council Bluffs chapter of the society for its major part in the preparation of the convention program, then swung into a review of association affairs for the past year.

R. M. Scoular, president of the Omaha Grain Exchange, welcomed the superintendents with an address timed to problems of the moment. He pictured briefly the forms of government at work in the world today, and drove home the point that democracy must now prove itself efficient enough to survive. The elevator superintendent, he said, would play a major part in providing that proof.

Dealing with the same theme, J. L. Welsh, vice president of the Grain and Feed Dealers National Association, said that the grain trade must give every possible assistance to government officials in the work of conserving the nation's grain, through maximum acceleration of both trading and shipping practices. Compared with the situation before harvest in 1941, he stated, there

Gilbert Lane, plant superintendent for the Arcady Farms Milling Co., Chicago, was elected president of the Society of Grain Elevator Superintendents at its annual convention in Omaha.

was 100,000,000 bus less storage capacity this year. He felt that to handle the new crop it would be necessary to build much additional storage, not on farms, but at the markets.

Although the address by Frank A. Theis, president of Simonds-Shields-Theis Grain Co., Kansas City, Mo., was nominally concerned with the relationship between the "front office" and the superintendent, he, too, dwelt upon the problems war has brought to grain men. With a big job to do, he said, there must be loyalty and support on the part of the superintendent, while the office must show appreciation and understanding.

Mr. Theis reminded his audience briefly of the drastic changes that have taken place in the grain handling system in recent years. The industry has faced three major emergencies, he said —the first World War, the beginning of the government grain program which, during the depression, brought great accumulations of grain to the lowest cash value ever known, and the present war. Some of the problems might seem almost insurmountable, he said, but he felt he was speaking for all when he stated:

"We are willing to accept the challenge and we will do the job!"

Mr. Theis was particularly concerned with the need for expeditious handling. He warned that if the grain industry could not do the job itself, rules and restrictions from which it might never again be free would of necessity be placed upon it by the government. One suggestion to avoid congestion at harvest time was for a permit system to be established, through which no cars would reach the yards unless means for their disposal was certain.

In two months, Mr. Theis said, wheat would be moving in Texas. That meant the problem was not one of the future, but of the present. The crop must flow efficiently, or the industry would take the blame. And the accomplishment of the big job ahead, he felt, would not only serve its own end but would be one of the best means of proving to the public that our present social order was workable.

More reasons for the elevator superintendent studying wartime loading and shipping were suggested by Arthur McKinley, vice president of the Omaha Elevator Co. He described the war as one of "movement," and called movement the extra ingredient of production. Urging the loading of bins and cars to their maximum, he suggested a thorough examination, by the elevator man, of the handling system in each plant.

PROTECTION AGAINST FIRE

Another phase of elevator operation that has sprung more prominently into the general picture is protection against fire. With the probability that rebuilding may be virtually impossible, and because every cubic inch of space is needed, the necessity for safeguards against loss by fire and explosion is now more appreciated. C. R. McCotter, of the National Mutual Fire Insurance Co., discussed these safeguards, going back over the past year to cite the major fires that have destroyed millions of dollars' worth of property. That these might have been prevented was illustrated by his analysis of their causes.

Sergeant Leroy Besler, of the Omaha Police Department, cast light upon a matter in which all grain men are interested—sabotage, and the steps that have been taken by the government toward its prevention. He told his audience that the subversive bureau formed by the Omaha department early in 1940 was typical. Aided by experienced FBI men, the bureau launched surveys of important plants in its area, co-operating with the plant authorities in working out plant protection systems. The FBI,

he stated, had a booklet, "Suggestions for the Protection of Plant Facilities," which was available to responsible business men.

In plant protection, he stated, one of the first steps was an examination of the personnel. Finger printing and an investigation of background were called essential. He described these as principal methods of sabotage: damage to equipment; damage to power supplies; damage to materials or to finished products; alteration of formulas; pollution of products, and arson.

PRIORITY RATINGS EXPLAINED

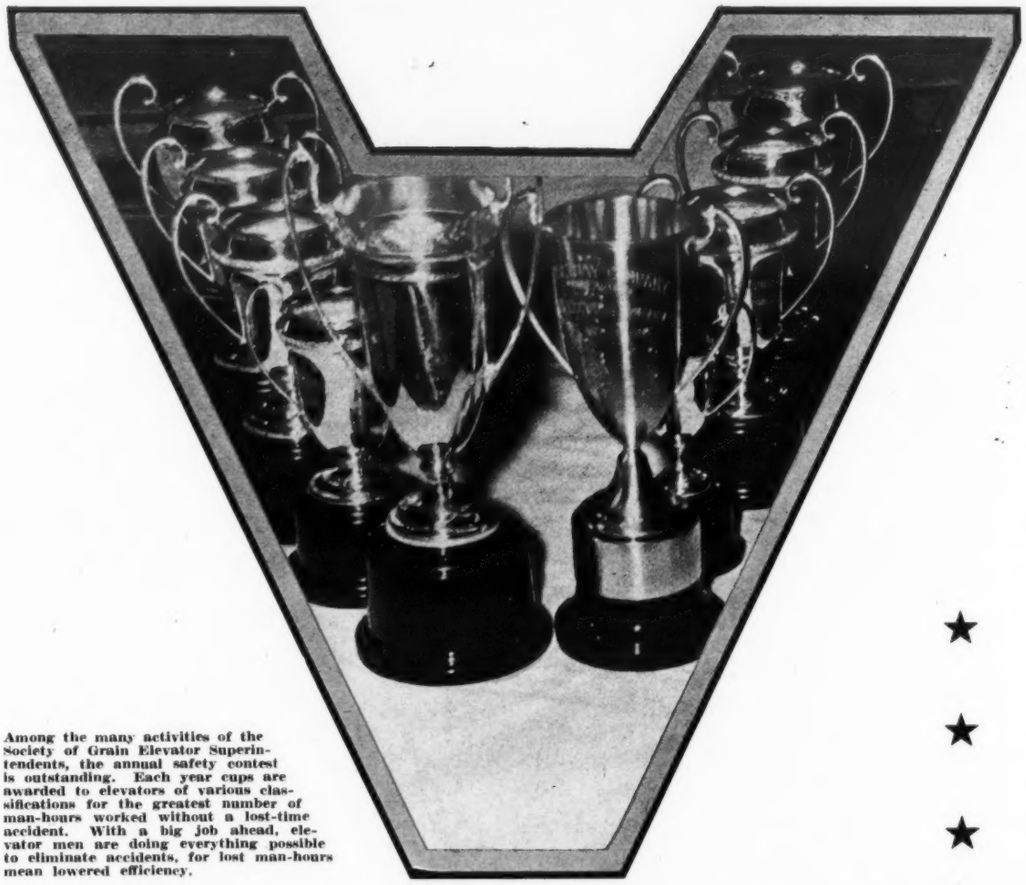
The priority situation is an ever-changing one but, according to B. N. Kilbourn, analyst for the War Production Board, any step taken by the board is based upon fundamental principles of the priority system. These are, first, that any order placed under a rating must be accepted and must be filled in its turn. Second, no inventories must be allowed beyond a practical working minimum.

THE SUPERINTENDENT'S RESPONSIBILITY

Gilbert Lane, newly elected president of the society, presented a thoughtful address concerning a phase of the superintendent's responsibility that has steadily increased in importance during recent years. His subject was the relationship of a supervisor with his men, on the one hand, and his employers on the other. He quoted statistics to the effect that of the world's workers, 12% are supervisors and 4% are higher executives. This, he said, illustrated the importance of a superintendent's obligation to the nation today. Since the war was largely a war of production, he stated, the men who watched over that production were a vital part of the war program.

Mr. Lane reminded his listeners that more production is needed. More plants and more machines, he said, would bring part of the increase. But most important, he felt, was efficiency. An increase in production of only 1%—due entirely to more efficient operation—would be equivalent to adding 6,500,000 man-hours a year, he declared. He placed the responsibility for increased efficiency into the hands of superintendents.

Salvage practice was treated by Jack Coughlin, superintendent for the Brooks Elevator Co., Minneapolis. Salvage, he pointed out, included rehabilitation of the grain, and there should be good cooperation between salvage and fire departments. The indiscriminate use of water was, he said, often responsible for unnecessary damage.



Among the many activities of the Society of Grain Elevator Superintendents, the annual safety contest is outstanding. Each year cups are awarded to elevators of various classifications for the greatest number of man-hours worked without a lost-time accident. With a big job ahead, elevator men are doing everything possible to eliminate accidents, for lost man-hours mean lowered efficiency.

Harold Wilber, superintendent for the A. E. Staley Mfg. Co., Decatur, Ill., compared various methods of making moisture tests and pointed to seeming discrepancies between totals of raw material and finished product when such tests were not accurate. Leonard Danielson, of the Arcady Farms Milling Co., discussed static and methods of its control, stating that common sense in its grounding and in preventing its generation was the logical approach to the problem. Grover Meyer, of the Kansas City Power & Light Co., answered a series of questions concerning electricity, in which it was brought out that power rates were based upon the ability of a utilities company to use its investment in power generating equipment. Elevators, Mr. Meyers said, represented a difficult type of load because of its constant fluctuation. Flour mills, on the other hand, are generally easy to supply because their work follows a level pattern.

T. C. Manning, superintendent for the Uhlmann Grain Co., Kansas City, spoke upon foremanship, prefacing his remarks with the statement: "It's the day's work that decides profits."

A departure from the problems that had been holding their attention greeted the superintendents when Major General F. E. Uhl, of the United States Army, addressed them upon the type and quantity of food received by the nation's armed forces. For the first time in the history of the elevator superintendents' society, according to President Christensen, ladies sat in on the session. It must, Mr. Christensen remarked, have been General Uhl's uniform that attracted them, because the army man's departure from the room preceded their own by but a few steps.

General Uhl said that bread was the largest single item of food in the United States Army—"and our soldiers will not," he stated, "become involuntary rice eaters." He compared methods of feeding troops today with those employed in Revolutionary and Civil War days, and said that our modern soldiers received the best white bread that could be produced. The per capita army consumption is 275 lbs of bread annually, plus grain in many other foods.

R. S. Pow, superintendent for the Reliance Grain Co., Ltd., Fort William, Ont., gave a talk almost wholly divorced from society affairs. His subject was the war, and the part we all must have in it. He described propaganda as one of the enemy's favorite weapons, and warned against letting it result in contradiction of feeling, panic and other reactions for which it was designed.

Speaking of chapter activities, Vincent Shea, president of the society's Minneapolis chapter, said that in his opinion a good meal went a long way toward insuring good attendance. Open forums, industrial motion pictures and meetings to which elevator managers were invited were, he said, important factors in the

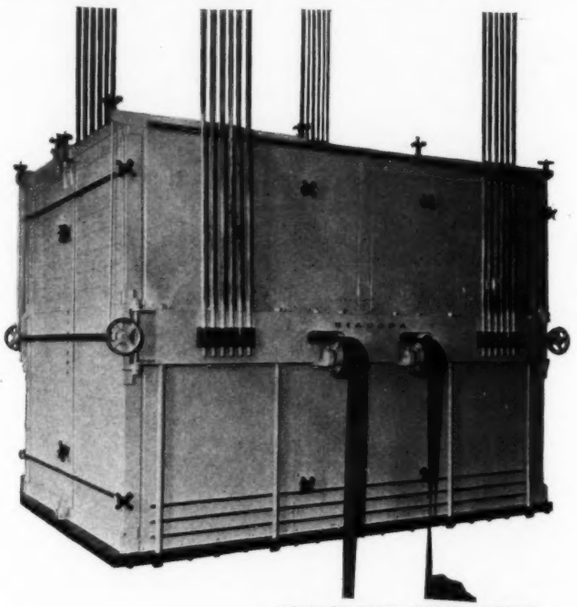
(Continued on page 19a.)

Between the flags of the nations from which its membership is drawn, these past and present officers of the Society of Grain Elevator Superintendents were photographed at the speakers' table during the society's recent convention in Omaha. At the left is Past-President Oscar Olsen, Duluth-Terminal Elevator Co., Duluth, Minn. Next are T. C. Manning, Uhlmann Grain Co., Kansas City, past president, and the new president, Gilbert Lane. H. L. Heinrickson, Terminal Elevator Corp., Sioux City, a member of the executive committee, is at the microphone. Paul Christensen, president during the past year, is next, and seated by him is E. J. Raether, another past president. Charles Walker, at the end of the table, is head of the Omaha-Council Bluffs chapter of the society.

Whether Used for Rebolting or on Regular Mill Streams, the Niagara Gyro-Whip and Super Sifters Wear Cloth Less and Bolt More Flour Per Sieve Area!

WAIT A MINUTE!!

That's what you could reasonably say if we made such a statement to you in person . . . . . The conversation might go something like this:



FOUR-SECTION SUPER SIFTER
FOR MILL STREAM APPLICATION

● "Look here!" you'd contend. "I know that high-speed sifters have more capacity than slow ones. A car traveling at high speed covers more miles than a slow one, too. But it wears out the tires faster! And if that isn't enough, considering the times, I might add that it uses more power, too. So I'd say that your higher capacity would mean that the cloths would wear out faster—and that you'd use more power, rather than less."

Now such a statement from you would give us an opportunity to settle down to a favorite topic. Our answer would probably be something like this:

● "Your assumption," we'd say, "is a common and natural one. But it isn't based on facts. The truth of the matter is that a so-called high-speed sifter actually moves *slower*. That's why it bolts more."

● "Hold on, now!" you'd logically demand. So we'd hasten to clarify our statement.

● "What we meant to say," we'd explain, "is that on the high-speed short throw set-up the *sieve* moves slower than in a standard, 180 r.p.m., 4-inch-throw job. It's a matter of arithmetic. A sieve moving on a 2-inch radius (a four-inch throw) travels on a circumference of 1.047 feet. Multiply this by 180 r.p.m. Thus a point on the sieve travels 188.4 feet per minute. On a high-speed sifter moving 300 r.p.m. on a 1-inch radius the sieve would travel only 156.9 feet per minute. That's over 31 feet less travel every minute of operation. In a 24-hour day, your high-speed sifter sieves will travel eight and a half miles *less* than those in a 'slower' machine. . . . You see, the sieve actually moves 18% slower. That means that *the openings in the mesh are that much more accessible to the particles being sifted!* They go through more easily. And, because it doesn't travel so far, the cloth is worn less by the material it sifts.

● "It's all a matter of proper speed and throw. Too wide a throw, or too high a speed, would move the mesh so fast that the opening would, for practical purposes, be obliterated by the threads that make the mesh. GYRO-WHIP AND SUPER SIFTERS are scientifically designed to give the optimum sieve opening at the lowest speed needed to overcome the friction between bolting cloth and stock. (If this friction were not overcome, the stock would merely 'ride' the cloth.)

● "In doing this, these sifters use less power because they are smaller and lighter. They wear cloth less, because it does not travel so far. And—they bolt more!

▼ ▼ ▼

● "IN SERVICE, GYRO-WHIP AND SUPER SIFTERS HAVE INCREASED CAPACITY PER CLOTH AREA BY FROM TEN TO FORTY PER CENT. THE GYRO-WHIP HAS FOR SEVERAL YEARS BEEN RECOGNIZED FOR ITS ECONOMY AND USEFULNESS AS A REBOLTER. ITS YOUNGER BUT BIGGER BROTHER NOW PROVIDES SUFFICIENT CAPACITY FOR REGULAR MILL STREAM WORK. IDEAL FOR LARGE REBOLTING JOBS, TOO."

RICHMOND SIFTERS ARE BUILT IN EVERY SIZE TO FIT YOUR REQUIREMENTS!

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MANUFACTURERS OF: HIGH - SPEED SIFTERS, DUST COLLECTORS, MAGNETIC SEPARATORS, GRAIN CLEANING MACHINERY AND A REVOLUTIONARY NEW CRACKED CORN SEPARATOR

This Year's Infestation Problem

By Richard E. Miller

Assistant Technical Editor of THE NORTHWESTERN MILLER

This paper was presented at the annual convention of the Society of Grain Elevator Superintendents, held at the Hotel Paxton, Omaha, April 9-11, 1942.

FOR years I've heard of things called vicious circles, but, until now, I've never been able to identify one satisfactorily. At last, however, I can give an adequate description of the term: it's the dreary accumulation of events which take place with the following recipe:

Take 1 lot of grain. Add a dash of insects such as weevil or similar unpleasant creations. Include more than a normal amount of moisture. And allow to heat slowly.

First, the moisture and the heat create excellent light housekeeping conditions for bugs. And the bugs, full of vim and vigor, turn right around and produce more heat and moisture. Then the grain decides that it, too, wants to play. So its carbohydrates begin to oxidize. This brings forth more heat and moisture. The moisture and the heat, in turn, produce excellent light housekeeping conditions for bugs. See what I mean?

Like many other things, this unhappy chain of events can largely be blamed on the weather. Every once in a while the weather-makers take a notion to get busy on the circle of grain, bugs, heat and moisture—and when they do those who operate grain elevators find several more thangs about which to worry. Last year's crop is a good example of this kind of trouble.

An elevator man queried recently concerning the infestation problem this year stated that a good estimate would be that at least 80% of all grains received in terminal elevators over the entire United States during past months have contained primary infestations of various insects. These, he felt, were partially due to the increased length of time the grain had remained in unprotected storage at country points. Much of the infestation, he believed, occurred in the field before the grain was threshed.

Because of this situation, he was of the opinion that terminal elevators must accept the probability that any grain received would contain some infestation. Consequently, steps to keep this infestation from becoming serious must be taken. Speaking for his own firm, he said that the circumstances had led them to the practice of treating much larger quantities of grain than formerly. Treatment, in fact, was described as a first step in grain conditioning rather than as a last resort.

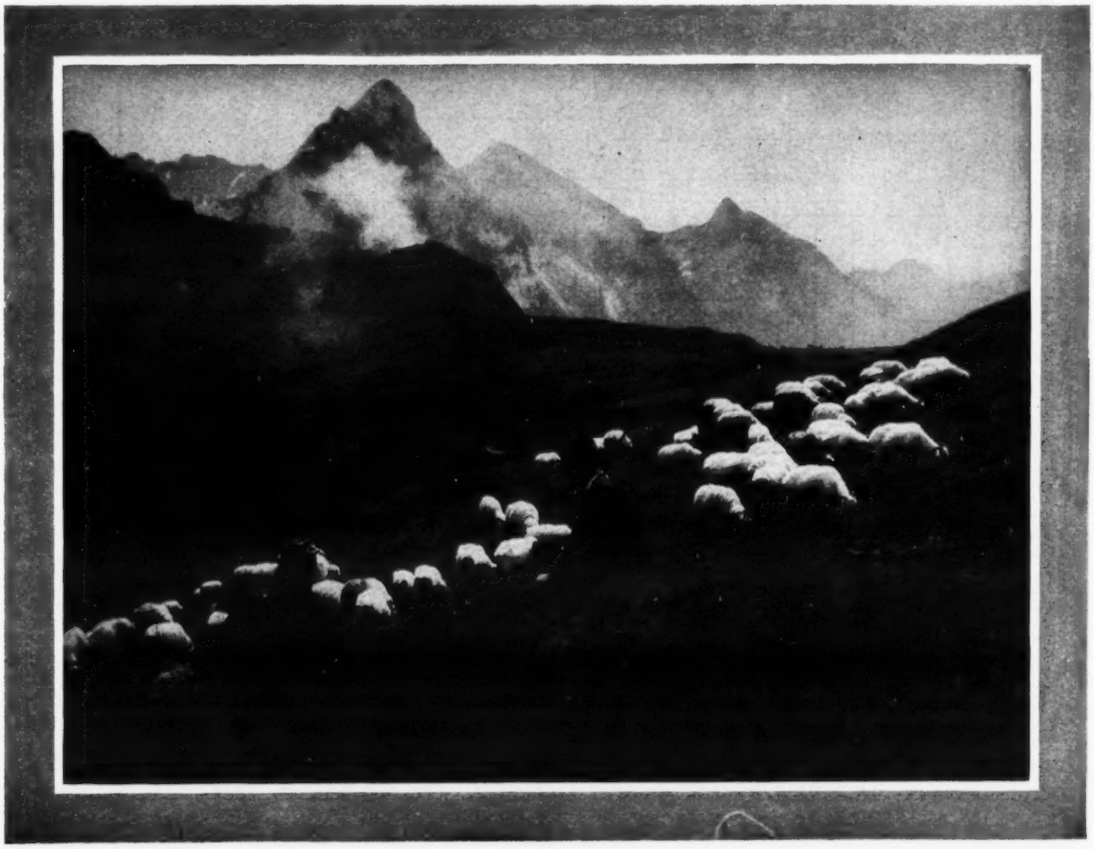
As a background for this picture another helpful correspondent gave us this information: Last fall, market receipts at Kansas City were, during some weeks, averaging from 7 to 13% weevily. Terminal elevator operators found it necessary to turn and fumigate far more than under ordinary conditions, because of these high insect populations.

There was a wet harvest last year. Most of the grain going either into terminal or farm storage had moisture contents considerably higher than normal—and this was aided and abetted by weather of generally high humidity. That was one link in the infamous vicious circle.

This elevator man pointed out that although it isn't extremely difficult to control such conditions in modern elevators, less than 40% of the total grain crop of the nation was in such storage. The bulk had been stored on farms for various periods before reaching the market. And the farmers had not, for the most part, prepared anything approaching adequate storage facilities. Temporary bins, old sheds, barns and other unfortunate choices were brought into service to "keep" the grain. There was already a great deal of grain on the farms, because of government programs. All in all, the situation pointed to high damage—and that was shown to be the case at the markets.

Thus the condition facing the operators of elevators was not, and is not now, normal. Grain arrivals must be watched closely. Some elevators, I'm told, fumigate everything that arrives at the house as *soon* as it arrives. They find it too costly to wait until damage starts. As one writer put it, "With the crop of last year it has been only a question of how many days after a car

(Continued on page 25a.)



CONTRAST IN NUTRITION

Feeding 200,000,000 people engaged in total war presents a mighty problem. They cannot be herded on some choice mountain pasture and left to feed off nature's table. Food must be transported to them, at home and in distant lands, over facilities sorely taxed by rubber shortages, ship sinkings, and movements of military forces and equipment. To do this and at the same time safeguard against the vitamin deficiencies encountered even before the war, each cubic foot of space must carry new high vitamin values. Enriched flour will play a vitally important role in accomplishing this, especially since its thiamine and niacin levels hold up under widely varying climates. Moreover, the costs of enriching ingredients are down to new low levels. Time is precious. If your plans are not complete for "all out" enrichment of your white flour output get the advice of our technical staff without delay.

VITAMIN DIVISION

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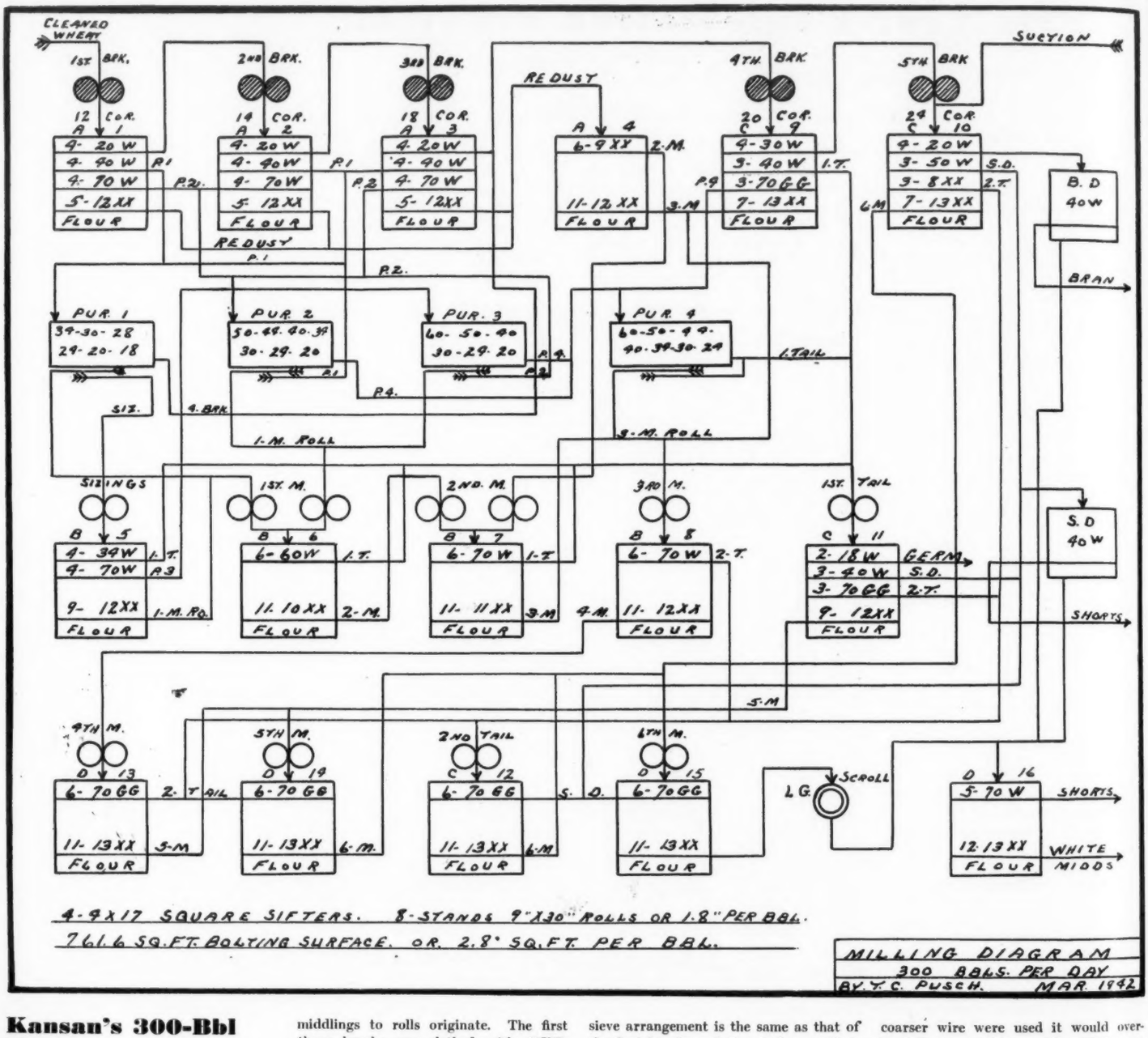

Kansan's 300-Bbl Flow

● **By T. C. Pusch**

THIS program starts with cleaned wheat, by which is meant wheat that has been tempered to a moisture content of 15% and has been over a milling separator, oats machine, scourer and aspirator before being delivered to the grinding bin.

Then the cleaned and tempered wheat goes through a half stand of 9"x30" corrugated rolls. These rolls should be cut 12 to the inch, and they, as well as all the breaks, should have a differential of 2½ to 1, with a spiral of ⅝". The smooth rolls should all have a differential of 1½ to 1.

The first-break extraction should be about 20%, and as little flour as possible should be made. The first sieve in the section is standard, 20 W. The overs go to the second break rolls and the throughs on to 40 W. The stock will be large middlings, and they are sent to Purifier 1. The overs of the 70 W, which will be cleaner middlings but smaller, go to Purifier 2, where the first middlings to rolls originate. The first three breaks are clothed with 12XX, with overs to the re-dust section. The reason for this is that the overs will be quite dusty, and will require additional bolting.

The second break rolls have 14 cuts to the inch. The extraction should be about 40%, because this is a good place to make a lot of good middlings. By "40% extraction" it is meant that 40% of the rolls' products will pass through the top scalp, which is also 20 W. The sieve arrangement is the same as that of the first break, and the stocks are identically routed, as is also the case with the third break. The third-break extraction should be about 36%, always keeping in mind that as many middlings and as little flour as possible should be made, because better flour can be produced from the middlings by the reduction rolls than by the break rolls.

The fourth break rolls are cut 20 to the inch, and the extraction should be about 20% through the 30 W. If a coarser wire were used it would overload the first tailings rolls with branny material. The next sieve is a 40 W, which will let the good middlings bolt through. They are sent to Purifier 4. On the fourth break it is usually proper to use 13XX flour cloths.

The fifth break extraction is problematical. With it the miller can control the percentages of bran and shorts, and the other stocks will have to take care of themselves. The 20 W used as the top scalp will give plenty of shorts. The throughs, over a 50 W, are sent to shorts duster. A coarser wire than 50 would probably allow too much branny material to go to the second tailings rolls. The next sieve, 8XX, furnishes fairly clean fine midds for the sixth midds rolls, with the overs going to the second tailings. The flour cloths are 13XX.

From the re-dusting section, the 9XX scalping sieves provide clean, sharp stock for the second midds rolls, with the throughs going on to 12XX for bolting out the flour. The well-dusted overs of the flour cloths are sent to the third midds rolls. Because both middlings streams are well dusted, they will re-

. . and It Started With . .

Not with Eve—nor Adam—because milling wasn't much of an industry in those days. But millers have had flow sheets for a long time, and no two, it is safe to say, have agreed completely about any one program. In the March issue an incomplete flow sheet was published. There have been many comments; some are presented here. The first, by Mr. Pusch, is an entirely different program (see the accompanying drawing), offering a sifter arrangement which differs somewhat from that originally shown.

duce easily and produce a large percentage of high grade flour.

Now for the purifiers. No. 1 is fed with the overs of 40 W in the sections handling the first three breaks. Usually the cloth numbers of this purifier start with the number the stock has passed over, but when this is done the first 12" of purifier cloth is wasted. By starting with cloth a little coarser, the benefit of the entire purifier cover may be had. The first cut should take in all the clean white middlings. They are sent to the first midds rolls. The second cut will include all the sizings clean enough to be sent directly to the sizings rolls. The tail will be stock containing bran and chunks that can best be reduced on the fourth break rolls.

It will be noted that the second cuts of Purifiers 2 and 3 are spouted back to the preceding purifiers. As an example of the purpose of this, suppose there should be too many large middlings through the 40 W of the first, second and third break sections. Purifier 2 would be overloaded. But with this system, the larger middlings could be sent to the proper purifier, helping to keep the mill in balance. The tailovers of Purifiers 2 and 3 go to the last purifier, No. 4, and if there should be any good middlings in them they will be recovered on Purifier 4 and sent to the third midds rolls, instead of going to the first tailings rolls.

It is intended that the sizings rolls should be adjusted to reduce the middlings in size and flatten the germ but not make much flour—perhaps only about 10%. The overs of the 34 W will contain germ, bran and some middlings attached to bran. These will be taken care of by the first tailings rolls. The throughs of the 34 over the 70 are sent to Purifier 3, and very clean middlings can be taken off this purifier and sent to the first midds rolls. The throughs of the 70 are bolted on 12XX, and the overs of the 12XX are very clean. They are sent to the first midds rolls direct.

No comment is necessary on the first, second and third middlings reductions, as they follow standard practice very closely.

With regard to the first tailings rolls, it is intended that they should be adjusted so that the germs will be flaked and recovered with the overs of the 18 W. This is of a good deal of importance today, because of the interest in vitamins and the desirability of recovering germ, which is rich in vitamins. The arrangement shown is somewhat unusual, as most flow sheets (including the "incomplete" one published in the March issue) scalp first tailings to shorts duster over about a 36 sieve. Ordinarily, germ recovery from the sizings section is attempted, using about an 18 W or G. G.

The throughs of the 18 of this first tailings section pass over a 40 W, and are sent to the shorts duster. The throughs of the 40 are passed over 70 G. G. and sent to second tailings rolls. Usually the stock is poor, but if any material worth recovering for flour is contained, it may be recovered by the second tailings reduction. The flour cloths are 12XX; the overs should contain some fair middlings, which are sent to the fifth midds rolls.

It will be noted that the throughs of the bran duster and shorts duster, together with the products of the last middlings reduction, are sent to a sifter section. Some millers are of the opinion that this stock is best sifted by a centrifugal reel, but a sifter works very satisfactorily if plenty of bolting surface is available. Again, most flow sheets show the overs of the flour cloth of the stocks originating with the bran duster and shorts dusters spouted back to the last reduction rolls. However, when this stock is properly sifted the residue has such a high ash content that nothing is gained by trying to recover flour from it, and in this program it is sent directly to feed.

It will be noted that a great deal of surface has been allotted to scalps. This has been found to produce good results. There is not much chance that middlings will be sifted too much, but it is dangerous to use too much surface as flour cloth because bare bolting produces flour with high ash.

Comments from Texas

I HAVE been looking over that "incomplete" flow sheet for several days, and have about decided to take a shot at furnishing the missing information, hoping it will be correct, or nearly so.

As this is a 300-bbl mill, I think we should assume that it should be capable of doing good work on bakers' wheat, on "family flour," and probably on a softer blend than that used for the family, for some "special orders"—cracker or cake flour.

For this I would choose the good old stand-by, the Dawson corrugation, for all break rolls. Spiral should be ½" to the ft, running dull-to-dull, with differential of 2½ to 1. Following is a list giving all the information called for:

(a) First break corrugations, 12.
(b) Second break corrugations, 14.
(c) Third break corrugations, 16.
(d) Fourth break corrugations, 20.
(e) Fifth break corrugations, 24.
(f) Grading sieve, first break section, 58 GG.
(g) Grading sieve, second break section, 58 GG.
(h) Grading sieve, third break section, 58 GG.
(i) Grading sieve, fourth break section, 54 GG.
(j) Grading sieve, fifth break section, 52 GG.
(k) Top scalp of sizing section, to feed (valved to shorts duster).
(l) Second scalp of sizings section, to first tailings rolls (valved to Purifier 4).
(m) Overs of 60 GG, sizings section, to Purifier 2.
(n) Throughs of 60 GG, sizings section, to second midds rolls.
(o) Bran duster cloth, 35 W.
(p) Shorts duster cloth, 40 W.

Item k: I would valve top scalp of sizings to either shorts duster or directly to feed. I believe it is not wise, with some wheats, to send this scalp to a duster where it gets pretty rough handling if the brushes are kept up close to the wire. This would tend to make the duster flour poor, and the stuff is poor enough already.

Item l: I would valve the second scalp of sizings, also. Most of the time it should go to the first tailings rolls, but I would want to be able to send it to Purifier 4 if that was advisable.

I favor a "good" roll suction and a "poor" roll suction, but on a mill of this size the double arrangement is not common. When used, the poor suction should be sent to the fifth break section and the good suction to fifth midds section. This allows the miller to make a longer percentage of high grade flour. —TEXAS MILLER.

From a Canadian Miller

AS a French-Canadian miller operating a small mill, I will try to complete the flow sheet published in your March issue. I suggest for the break rolls:

First, 12 corr.
Second, 14 corr.
Third, 16 corr.
Fourth, 20 corr.
Fifth, 24 corr.

Differential for all break rolls, 2½ to 1. Spiral, ½" to ft. Rolls, 9"x36".

For the sizings rolls, 36 corrugations to the inch, one pair of 9"x36".

For the first midds, two pairs of 9"x24", with 40 corrugations to inch.

For the second midds, two pairs of 9"x24" rolls, 45 corrugations.

For the third midds, one pair 9"x36" rolls, 50 corrugations.

All other reduction rolls, 9"x36", smooth. All differentials, 1¾ to 1.

For the grading sieves in break sections I would suggest 50 GG for first break; 50 GG for second break; 50 GG for third break; 54 GG for fourth break; and 60 GG for fifth break.

Destination of stock (k), fifth break: (l) to Purifier 2; (m) to Purifier 3; (n) to Purifier 4. Bran duster wire, 45; shorts duster wire, 55.

I think this suggests what is needed to complete the flow. In a future number of your journal I would like to see the complete flow sheet used in making the incomplete program published. And if any information is available about the "new method" of making flour with a high percentage of vitamin B_1 by making a longer extraction but keeping the flour satisfactory I would appreciate having it.—A. LAROCHE, ST. HYACINTHE, QUEBEC, CAN.

. . . No Let-Down . . .

WITH the demand for more guns, more planes, more tanks, more ships—and for the men to make and use them—becoming greater with every passing day, it will not do to lose sight of the fact that the milling industry has an important job to do, nor to permit that fact to remain generally unknown. The job is important because without an adequate supply of suitable food all war effort would slow down and come to a standstill.

Wide-awake operative millers and milling executives are fully aware that while efficient and uninterrupted production of wheat flour has always been worth striving for, it is doubly necessary to strive for it now. There must be no waste—of materials, of power, of equipment. There must be no avoidable lost motion. It is up to every man who directly or indirectly has a part in production to look, not just at the surface of things, with the thought that in times of stress the full utilization of ingenuity and skill is not to be expected, but deep into the fundamentals of the art and science of milling, with the purpose of discovering how still more ingenuity and still greater skill can be applied in mill design and operation.

The Association of Operative Millers, an organization composed of men who are responsible for the design and operation of flour and cereal mills, provides practical means for accomplishing this. It is neither a trade association nor a trade union. Its purpose is to advance the interests of the milling industry, and the nation, through the advancement of its members in proficiency, skill and loyalty. It encourages fair dealing and solicits the co-operation and support of all men whose activities are in the same or a kindred field. It has been, now is, and must continue to be, a power in helping the man upon whose shoulders the responsibility for efficient production rests, overcome his greatest handicap—the handicap of isolation.

The 47th annual convention of this association is scheduled for Seattle next June. Seattle is a long way from Buffalo and Louisville and St. Louis and Chicago, and even from Kansas City, Dallas and Minneapolis, but there is not a miller in any part of the country who could not benefit both mentally and physically by "letting up" long enough to make the trip, to fraternize and exchange viewpoints with his fellows. Milling executives who consider it a good investment in time and money to make it possible for their key production men to attend the meeting will not be indulging an extravagance. This is no time for a "let-down," for there is little occasion to doubt that the near future holds the greatest demands ever made on the milling industry for increased economical production.

E. S. M.

Dangerous When Loaded

AND SO IS AIR!

Contrary to a popular bromide, an unloaded gun isn't "the one that always goes off." But when a gun's loaded it's dangerous. Modern safety devices—and common sense—control that danger.

Unfortunately, the danger of "loaded" air is not as easily recognized. Comparatively, however, the potential power of explosion is much greater and the results far more devastating in the loss of life and property. The force of a common revolver cartridge is infinitesimal as compared with that of a recent dust explosion which sent ton-size pieces of concrete hurtling several hundred feet through the air. Dust-laden air is a *high* explosive!

There are two principal aids in the protection of a plant against dust explosion. One is the maximum elimination of sources of ignition. The other is the *control* of air that is necessarily dust laden. Both precautions must be taken *—and the control of air can only be successfully accomplished by skilled air engineers.*

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MY DAY!

A Mill Supply Man Puts His Cards on the Table —If He Can Find Room for Them Among the Many Forms That Today Clutter His Desk

WHEN you are in charge of a company selling a general line of flour mill supplies you have a whale of a job these days. With Uncle Sam scrutinizing your inventories and millers anxious to allocate their future needs from your stocks, it's enough to give you the jitters.

So you plunge into your work every morning with a zest bolstered by patriotism and a new kind of loyalty to your friends and customers.

Millers can be very helpful to you by specifying their needs carefully. Mistakes, which are the results of haste and carelessness, if corrected before they leave the mill, will save the miller time and avoid delays.

You are a vital link in the flow of materials from manufacturers to millers and the chain must not be broken. You specialize in "same day" service. That means you should have adequate stocks on hand to fill orders and in anticipation of seasonal rushes. But your factory shipping commitments are falling five or six months behind normal delivery; raw materials are diverted increasingly to wartime production. Sometimes only a small part of your stock orders are filled. Scarcity becomes a ghost to haunt your waking hours. Days are occupied in search of other sources of supply which are already harried by their regular customers demanding service.

The mailman swings in and deposits a stack of envelopes on your desk. You find orders for shafting, silk bolting cloth, leather belting, elevator bolts, buckets, flannel, scalping wire, floor brushes, transmission rope and many other items, large and small. It's your job to deliver these vital maintenance supplies at once.

Orders you can fill from floor stock are hastily prepared, checked, and dispatched that evening. Some of your customers, it seems, wanted their goods a week before they ordered. They get on the phone and ask you in explosive language where their orders are before the envelopes have had time to sift to the bottom of the wastepaper pile you are collecting for salvage. You calm the customer by remote control over the long distance telephone. Your handkerchief wipes a feverish brow and you turn again to the mail.

Here are a few orders you can't fill immediately, no matter how much you'd like to. One is for a purifier cloth. You'd like to make it up at once and ship it out but the amounts of cloth showing in the various sections don't add up to the total overall length your customer has penciled on the diagram. What *is* the correct size? You must write for the correct information before proceeding with the order. A delay like this could have been avoided if the miller had taken the time to check over the specifications.

Here's a current nightmare. Two millers didn't give you priority. One needs some elevator buckets for a breakdown. It's material for "maintenance, repair or operating supplies." Yes but the bucket manufacturer is going to be scrupulously careful about this scarce material business when he knows a stern bewhiskered gentleman in long coattails will be around to remind him that a 50mm shell case comes before an elevator bucket. You feel the effects of this prudence. You must go back to your miller and explain the priority requirements of "A-10, P-100," the general preference rating order applying to "producers" (millers) engaged in "processing" milling. The priority statement must be endorsed on the original order. Rather than hold up a breakdown job for this reason the material is sometimes shipped, but it means checking back to make certain the miller sends you priority. Otherwise, you cannot replace your stock from the manufacturer.

You read the next order: "30 ft of sifter double ply leather belting." That's fine! But the miller neglected to tell you the width of belt wanted. He's marked "rush" on the order too. That means a telegram or phone call to get this necessary information before shipping the belting.

This order for Russian bristle floor brushes can't be filled at all with pure genuine Russian bristle which you're accustomed to sending because this import has been cut off. Mixtures of tampico and horsehair, the next best trim obtainable, must be substituted.

Headache No. 5. Not infrequently a miller will order "2 yds of material like sample enclosed." Then he forgets to send the sample. So again it's delay in rendering quick service while you write back, asking for the forgotten sample, and warning him high priority is essential in securing the brass screen he desires.

Orders for bran duster, reel and purifier brushes are baffling sometimes. A brush for "a No. 1 reel" is ordered. Your past records, although complete, throw no light on this problem. You must write back for more information, full specifications of the brush block and trim. A rough sketch of the brush wanted, showing dimensions, would have enabled you to get into production without delay.

Here's a sample of cloth quite unlike anything you've seen before. Where to buy it? This means a trip around town on thinning tires, to various wholesale dry goods firms, matching your sample with available goods, testing for weight, color, texture, and so forth.

You take a chance in making up Canton flannel sifter stockings when a miller orders "a dozen of 8x12." You take a deep breath, hope the miller wants stockings 8 inches in diameter and 12 inches long, and cut into your dwindling stock of now not easily replenished flannel.

And so it goes. You feel like a badly worn sifter brush in an overcrowded bolter when you stagger home at the close of the day. But if this is the position you play in Uncle Sam's grand strategy, you're determined to do it. And with normal co-operation from your miller customers you can.

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DO YOU KNOW?

Not All of These Questions Are Directly Concerned With Milling, But They Touch Upon Closely Related Subjects. How Many of Them Can You Answer?

Q.—In the "Do You Know?" column recently it was stated that more heat must be added to water to increase its temperature a given number of degrees than is the case with other substances, but it was recently brought to my attention that hydrogen is being used for the cooling of electric machinery because it absorbs more heat for each degree of temperature rise than any other substance. What about it?

A.—The statement was to the effect that the heat-holding capacity of water is greater than that of other "common substances, such as alcohol or sand or salt." Hydrogen would not ordinarily be considered a "common substance," as it cannot be seen except in the liquid form, and not many have seen it in that form very many times. As a matter of fact a pound of hydrogen has about 3.4 times the heat-holding capacity of water, the "specific heat" of hydrogen being approximately 3.4 as compared to 1.0 for water. Water is a compound of hydrogen and oxygen, and its specific heat factor is in ratio of the specific heats of its components and their proportionate weights.

By "specific heat" is meant the quantity of heat required to increase the temperature of a pound of a substance 1° on the Fahrenheit scale. Water requires 1 heat unit (1 British thermal unit) while 3.4 B.t.u.'s are required for hydrogen. When heat is given up by a body, during cooling (without evaporation, if the substance is a liquid), the above process is exactly reversed. The specific heat of air is a little less than one fourth that of water, which means that it will take more than four times as much air, by weight, to absorb the same amount of heat that liquid water absorbs in increasing 1° in temperature. At ordinary temperatures it takes in the neighborhood of 13.5 cu ft of air to weigh a lb, and 1 B.t.u. will therefore increase the temperature of about 54 cu ft as much as it will increase 1 lb of water. The specific heat of wheat varies. For one thing, it is affected by the moisture content of the grain. It is not far from 0.5, however, or one half that of water. One B.t.u. will therefore raise the temperature of 1 lb of wheat twice as much as it will 1 lb of water.

Q.—Will water "burn" if the temperature is made hot enough?

A.—Water, as water, can't burn because it has already burned. When the hydrogen and oxygen combined to form the compound H_2O (water), combustion, or burning, took place. The substance will not burn again without dissociating the hydrogen from the oxygen.

Water is valuable in putting out fires for two reasons: one is that it will not burn, and the other is that it robs the combustibles of a great amount of heat and can reduce temperatures below the ignition point under favorable circumstances. This it does through its great heat-absorbing capacity and through the important process by which a vast number of heat units are "stolen" from the fire to be used in changing the liquid to vapor. It is dangerous to throw liquid water on some kinds of fire, however, because the force of contact causes scattering of the combustibles. They may thus be thrown entirely out of contact with the water and into zones where the heat they carry with them will raise the temperature of fresh combustibles to the ignition point. A stream of water thrown on a fire burning near dust at rest in layers is always extremely dangerous, for the force of the stream may easily throw some of the dust into suspension in the air, and when the mixture is composed of the proportions of dust and air necessary for rapid combustion, a "dust explosion" will result. The dusts of grains, including flour, provide both carbon and hydrogen for combining with oxygen present in the atmosphere, and when the combining action is made easy, the explosion that follows may be nearly as violent as that produced by the "high explosives" about which we have been hearing a lot lately.

Q.—What does the term "synthetic" mean?

A.—Literally, "synthetic" describes the process of putting together, in contrast to "analytic," the process of taking something apart to determine what it is made of. Millers are familiar with the word "analysis"—the name given to the analytical process, for wheat and flour and feeds of all sorts are analyzed continually in laboratories. In any particular case a substance, such as flour, is "taken apart" to find out how much of it is protein, for example, or how much mineral matter that is not combustible under certain conditions is contained. That which is measured is called "ash," as all millers know.

The formation of water by the combining of hydrogen and oxygen during the process of combustion may be called "synthesis," for what occurs is the joining of 2 atoms of hydrogen with 1 atom of oxygen, producing a new substance. When chlorine and sodium (a metal) are brought together under the right conditions, a substance which has been named "common salt" is formed. It is actually "sodium chloride," and may be called a "synthetic" substance. If the process is reversed, and the molecules of the substance are broken down, so that the analyst can find out (if he didn't already know) what common salt is made of, that would be "analysis."

Q.—Someone has recently said that most people do not know the difference between a "calorie" and a "vitamin." How can the difference be simply explained?

A.—There is, of course, no connection between a calorie and a vitamin. Some of the greatest minds of the scientific world were unable to describe a vitamin just a few years ago, but now it is known that each of the various vitamins so far analyzed are definite chemical substances. For example, vitamin B, is thiamin; etc. The calorie is a measure of heat quantity, just as is the British thermal unit. Engineers prefer to use the B.t.u., which is the quantity of heat necessary to raise the temperature of 1 lb

"C. J." saw his duty
. . . *and he doodit!*

Patriotic? Unquestionably! One would have to be to spend ten to twelve hours per day directing the destinies of Bunsby Mills (makers of super enriched, quick-rising, vitamin-fortified Bett-R-Bun Flour), sell Defense Bonds, worry about Junior's report card and still find time to join up for Civilian Defense. But then, the Bunsby name harks back to Colonial days and as history has it, it was Seth Bunsby who declaimed, "Give me 'Liberty' or give me the 'Milling Production.'" So little wonder that the same burning fire of patriotism flamed in C. Jonathan Bunsby, too.

Engrossed as he was with his patriotic duties he forgot one important defense within his own Mills—a defense against first-class saboteurs and fifth columnists that surely, if slowly, were rendering tons of wheat and Bett-R-Bun flour unfit to feed a nation engaged in its titanic struggle to preserve Democracy. The chances are that he might have been too late to catch these enemies had he not received a warning from his foreman that saboting weevil and fifth-columning moths were rampant in Bunsby Mills.

"Why," cried "C.J.," "haven't you been spraying and fumigating as I ordered you to begin to do last March?"

"We did," shot back the foreman, "until we ran out of insecticide. There has been an order for it on your desk since March 14 awaiting your signature."

"My signature be d——d! Wire Midland to send us four 65 gallon drums of their MILL-O-CIDE. It contains that Super-strength, Activated Pyrethrum. It's safe, yet strong enough to do a real job."

"And we won't have to shut-down while we're using it," added the foreman.

"Don't forget to order some GAS-O-CIDE, too, while we can still get it, for the fumigating," enjoined "C.J." "Food will win the War IF we don't use it to feed the bugs."

"Amen!" echoed the foreman.

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LINE OF FOOD INSECTICIDES

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Yes, food will win the war, yet it must be transported in containers that guarantee maximum protection against damage or spoilage in shipment. To meet these requirements, the textile bag has always been the best container. The manufacturers of textile bags have a vital job to do in winning this war.

And there's a big job all of us must do, if we are to write the terms of peace after this war. Only an all-out aid will do it, so buy Defense Bonds and Stamps today, and keep on buying them regularly. Every dollar and every dime invested in Defense Bonds and Stamps now will help speed the forces of Victory.

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of water 1° on the Fahrenheit thermometric scale, while a calorie, the quantity of heat required to raise the temperature of 1 cu cm of water 1° on the Centigrade thermometric scale, is preferred by chemists.

The word "calorie" has become more or less familiar to people generally in connection with foods, but the measurement used for that purpose is the "grand calorie," or the "kilo-calorie," equal to 1,000 common calories. Dr. C. O. Swanson, of Kansas State College, explains that this calorie is approximately equal to 4 B.t.u's. He gives the heat value of wheat flour as 1,610 calories per lb, with meat ranging from 700 to 1,800. Sugar has 1,815 calories per lb, the excess over flour being accounted for by the higher moisture content (the lesser quantity of solids) in a pound of flour.

v v

Q.—What is meant by "tram," with regard to mill rolls?

A.—The noun "tram" is short for "trammel," one meaning of which is the state of being in correct adjustment with respect to relative position. Thus mill rolls may be "in tram" or "out of tram." A trammel is, among other things, a plate or bar used in aligning or adjusting parts of a machine, and it also is commonly called "a tram."

Specifically, when the axes of the two rolls of a pair are not parallel the pair is "out of tram," though this is ordinarily applied only to the fixed position of the axes, as differentiated from an axis position readily changed by moving the adjusting wheels used to alter the breaking or grinding. Thus, if two rolls of a pair operating with their axes horizontal, or nearly so, have these axes parallel to each other, they would not be called "out of tram" if the rolls were set closer together at one end than at the other.

The importance of perfect tram should be apparent to anyone, but sometimes it isn't. Any deviation is bound to cause a deviation from perfection. Since perfection isn't possible, there is always some deviation, but the wider it is, the less the opportunity the miller has of getting the best breaking or grinding results.

A Canadian View

(Continued from page 7a.)

long-extraction flour could be produced without installing additional machinery to remill the shorts. However, the operating superintendents of all the large Canadian mills reported that, for various technical reasons, the milling of dry wheat is impracticable. . . .

Other ways of attaining the same end are open to the miller. The flours from the various milling operations are not always blended together. On the contrary, they are generally classified according to commercial quality and separated into groups to form different grades of flour. One grouping is shown in the following table:

	Pct.	Approximate thiamin content. Micrograms per gram
First grade flour.....	39	0.9
Second grade flour	30	1.6
Third grade flour	6	4.0
Low grade flour	2	14.0
	77	1.75

[To change micrograms per gram to I.U. per lb. multiply by 152.]

If the second, third and low grade flours, amounting to about half the flour produced, are combined, a mixture is obtained containing about 2.6 micrograms of thiamin per gram. Of course the miller using this procedure must be able to dispose of the high-grade flour produced at the same time.

CHARACTERISTICS OF APPROVED FLOURS

The production of flours to meet the specifications laid down by the Department of Health does not, therefore, present any very serious technical difficulties. The millers are investigating the methods outlined above, and possibly others as well, in an effort to discover which is likely to provide the least objectionable flour, from the point of view of their customers. However it may be made, flour having a natural thiamin content of 2.64 micrograms per gram is darker in color, inferior in keeping qualities, and is less well adapted to common baking practices, as compared with the standard grades of flour now in general use.

There has been a tendency on the part of nontechnical commentators to minimize these disadvantages, and to suggest that methods have been discovered in Canada of producing flour containing 2.6 micrograms of thiamin per gram [about 400 I.U. per lb] comparable in appearance and baking quality to the white flours now on the market. Actually, no developments of practical importance in connection with the manufacture of high vitamin flours have been reported since the Food and Drug Administration hearings were held in Washington in November, 1940. During the course of that inquiry, C. H. Bailey, a recognized authority in the field of cereal chemistry, suggested that consideration might be given to the question of manufacturing long-extraction flours containing from 1.8 to 3.0 micrograms of thiamin per gram. In making the suggestion Bailey referred to technological problems involved in converting long-extraction flour into bread. He pointed out that, as extraction is extended, the color of the flour becomes darker, and enzymes are carried over from the millfeeds which have a harmful effect upon the handling qualities of the dough. It would, therefore, be unwise, he said, to assume that flours above 75% extraction could be baked into bread with the same ease and to produce the same results as the flours with which the housewife and commercial baker are now familiar, and for which the technological processes of the modern bakery have been developed.

THE PROBLEM OF CONSUMER ACCEPTANCE

Because of the undesirable characteristics of flours milled to meet the approval of the Department of Health, and the further objection that they are quite unsuitable for the production of many types of cakes, biscuits and certain other baked goods, most milling and baking technologists have serious doubts that such flours will receive widespread and permanent acceptance. According to L. H. Newman, in the *Canadian Medical Association Journal*, 1941, tests have shown that bread made from the approved flour was favorably received by consumers, but these tests can only be regarded as of a preliminary nature. They were not conducted in a manner likely to provide an un-

biased opinion of a fair sample of the population. On the basis of past experience, it seems highly questionable whether the public will put up with any appreciable lowering of the standards by which flour and baked goods are judged, in order to secure the benefits, which must be accepted largely as a matter of faith, of a somewhat greater intake of the B vitamins.

If this view is sound, and if it is also true that the health and efficiency of the nation are impaired as a result of deficiencies of the B vitamins, the question arises as to whether it would not be in the public interest to make it obligatory for all mills to produce nothing but the approved flour for domestic consumption. Some of the objections to this step may be briefly mentioned. Since it runs counter to the broad current of popular taste, and because long-extraction flours are so completely unsuitable for many purposes for which high-grade flours are used, such a course would inevitably lead to a reduction in flour consumption. Should other countries adopt the same procedure, it would be a still more serious matter from the point of view of our national economy. The inferior keeping qualities of long-extraction flours would bring about a reduction in flour exports, especially to warm countries, while wheat exports would also suffer, if only because more flour could be produced from a bushel of wheat. Even if our export markets for refined flour remained, every mill in Canada would have to be equipped to make long-extraction flour, and this could only be done at considerable expense and by the use of materials urgently needed for war purposes.

The weight of these objections makes it necessary to examine carefully the benefits to be secured by the use of long-extraction flours containing 2.6 micrograms of thiamin per gram. In the first place, they would provide the average consumer with an additional 0.2 to 0.3 mg of thiamin a day. Associated with this modest increase in thiamin, there will be an increase in the nicotinic acid intake—an increase for which no need has been established, as far as Canadian dietaries, or the dietaries of the main bulk of the population in the United States are concerned. The chief purpose of making nicotinic acid [niacin] a required ingredient of American enriched flours is to relieve the pellagra situation in the South. Published data further indicate that the effect of using long-extraction flours on the intake of riboflavin, pyridoxin and pantothenic acid would be exceedingly small. Tisdall *et al* report that 7½ oz of the approved flour provide 0.06 milligrams more riboflavin than the same weight of the standard white flour now used by Canadian bakers. This increase amounts to only 2% of the estimated daily requirements of a moderately active man, and must therefore be regarded as approaching the point of insignificance. In the opinion of the authors, these benefits are insufficient to justify the adoption of long-extraction flours as a compulsory measure.

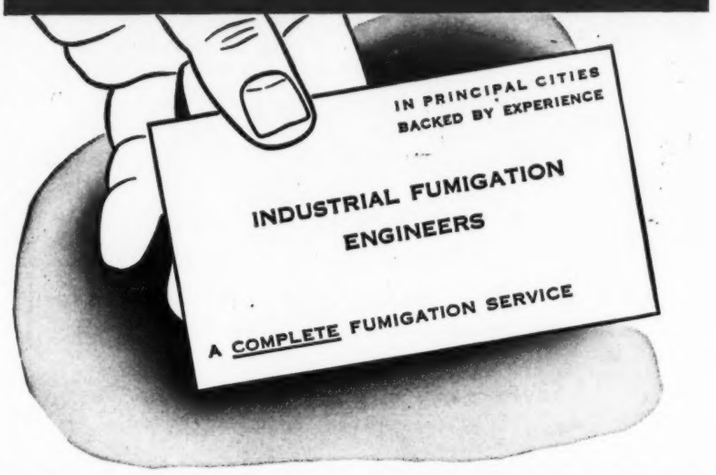
One other method suggested by the policies now being followed in Great Britain and the United States remains to be considered. It consists of the compulsory addition to flour of the B vitamins now available at reasonable cost. This method has the very definite advantage that it does not interfere with present milling methods, nor with the balanced production of the various grades of flour in Canadian mills on which so much of their export business formerly depended, and which will probably again become of importance when international trade is resumed. The procedure also greatly simplifies the millers' problems. Milling results, including the thiamin content of the finished flour, are influenced from day to day by several factors. Among these, changes in the weather, and in the character and moisture content of the wheat going to the grinding rolls, are perhaps the most important. It is difficult to see, therefore, how any mill can manufacture flour of guaranteed natural thiamin content on a competitive basis unless it employs a well-qualified chemist and has a laboratory properly equipped for thiamin assays. Such facilities can only be available at the larger plants. On the other hand, if synthetic vitamins are used, all that is necessary is to see that they are mixed with the flour in the required amounts. It should also be emphasized that additions of synthetic vitamins have no effect upon the appearance and commercial utility of flour, so that the question of consumer acceptance does not arise.

To raise the thiamin content of the average white flour now used in Canada to 4.4 micrograms per gram, and thus bring it well within the whole wheat range, would not cost more than 22c per capita per annum—an amount insufficient to interfere with the competitive position of flour in relation to other foods. For this amount, the average consumer would be provided with more than twice as much extra thiamin as he could secure from the use of the approved long-extraction flour. If the effects of thiamin deficiencies are as general and as serious as they are reported to be, the expenditure mentioned would seem to be well worth while. At the same time there are solid grounds for believing that the selling price of thiamin will be materially reduced in the near future.

CONCLUSIONS

While the authors realize that it will not constitute a complete solution of this complex problem, they nevertheless advocate, *as a first step*, the addition of enough vitamin by millers or bakers to raise the thiamin content of all flour used in Canada to 4.4 micrograms per gram. They further recommend that studies be instituted to determine whether Canadian dietaries are deficient in nicotinic acid and if evidence of a deficiency is found, that this vitamin also should be added to flour. The annual cost of raising the nicotinic acid content of white flour up to whole wheat level would not be more than 5c per capita. Since riboflavin intake is influenced to such a small degree by milling wheat, it is considered that, if this vitamin should ever be added to flour, it should be done under subsidy. Flour ought not to be saddled with the cost of making good deficiencies in other foods. And finally, the authors hold the opinion that no intelligent action can be taken with respect to pyridoxin, pantothenic acid and any remaining B vitamins until the knowledge of our needs for these substances and of their distribution in foods, especially in flour mill products, has been greatly extended by further investigation.

OUR CARD
Mr. Production Manager



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Here are the reasons this is possible: There is a great deal more to proper pest control than merely applying an insecticide or fumigant. The Industrial Fumigation Engineer knows this from long experience in the field—experience with all types of insect infestation, under all conditions in plants in the many branches of the Food Industry. This enables him to recommend the most efficient, most economical method of control for the particular requirements of *your* plant.

A complete survey of your plant and careful study of conditions by an Industrial Fumigation Engineer may result in his recommending that a special piping system be installed, and that the building be fumigated with LIQUID HCN at certain intervals. Again, he might suggest that your product be fumigated in a special room at a certain stage of production. In other cases, fumigation under a vacuum might be indicated as the best solution.

In brief, the Industrial Fumigation Engineer is prepared to take over the entire problem of pest control in your plant—he knows fumigation and the conditions and ways in which it can be used most economically and effectively; he supplies the right materials; provides trained and experienced workers; protects you with liability insurance, and makes periodic inspections to assure you of complete pest control at all times throughout all seasons of the year.

A trained Industrial Fumigation Engineer will survey your plant, and report his findings and recommendations for pest control—together with an estimate of the costs involved—without any obligation to you.

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WICHITA KANSAS

Gradual Reduction Compromise

IT is a rather well known fact that when one object slides over another, one of the results is friction. For example, the stocks moved over a gyrating sieve are subjected to friction. This is true also of a reciprocating sieve and of a reel. Actually, from the very moment a wheat berry is dislodged from the "head" it is attacked by a rubbing action whenever it is moved. When the berries are whole this friction wears away a small part of the bran coat. And when they are broken, the exposed endosperm is strongly affected by friction.

It is to be expected, therefore, that the endosperm exposed by the action of break rolls will be worn by a rubbing action when it moves upon the sieve of the bolter which follows. This action is called "attrition."

If the first break rolls were adjusted so that the berry were broken into three or four pieces only, the rubbing of the sieves would certainly grind away some of the endosperm. The product so removed would be very fine and dusty. Some of it would probably be pure starch, but it is inevitable that mixed with this would be substances derived from the bran coats, particularly from the ends of bran exposed when the berry was broken. It would be impossible to separate the "good" dust from the "bad." The product could certainly not be described as desirable.

The miller cannot avoid making some of this attrition product, but he can hold its production to a minimum by compromising with the principle of gradual reduction. In other words, the rolls must be set to produce sufficient flour and fine middlings to act as a "cushion" on the sieve and reduce the production of "dust" by friction.

If it were not for the problems of attrition, these middlings might well be made farther down the line in keeping with the true gradual reduction theory. But, as in many phases of milling, a compromise is necessary. While more high grade flour might be made if cushioning were not necessary, it is certain that as a cure for attrition it helps to produce the optimum amount of good flour from any given system.

——BREAD IS THE STAFF OF LIFE——

"The amount of grinding done on the preliminary reductions must be controlled by consideration of the amount of roll surface following. Obviously if the mill is generously surfaced a more gradual reduction process can be carried out than when a high flour extraction is desired from a short surface mill."—J. H. Scott, in "Flour Milling Processes."

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New York Coffee and Sugar Exchange
New York Cotton Exchange
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Enid, Okla.
Fort Worth, Texas
Amarillo, Texas

As host to the society, the Omaha-Council Bluffs chapter of the association worked hard to make the elevator men's convention a success. Some of the chapter's members are shown in this picture. From the left: E. W. White, Westcentral Co-operative Grain Co., Fremont, Neb; Robert Heaston, Omar Mills, Inc., Omaha; Jerry Lacy, Westcentral Co-operative Grain Co., Omaha; John Goetzinger, Rosenbaum Bros., Omaha; Charles Grossman, Scoular-Bishop Grain Co., Council Bluffs, Iowa; Robert Land, Omaha Elevator Co., Council Bluffs; Conrad Johnson, Butler-Welsh Grain Co., Council Bluffs; Charles F. Walker, Archer-Daniels-Midland Co., Council Bluffs; John Roenfeldt, Maney Milling Co., Omaha; Frank Guinanne, Butler-Welsh Grain Co., Council Bluffs; H. R. Sales, Updike Grain Co., Council Bluffs; Carl W. Talmon, Omar Mills, Inc; Earl Mahon, Butler-Welsh Grain Co., Council Bluffs, and Vern Clark, Nebraska Consolidated Mills Co., Omaha. This picture was taken on the trading floor of the Omaha Grain Exchange, where the conventioners ate a buffet lunch on the final day of the convention. Later they visited the Exchange laboratories and witnessed milling and baking tests.

Elevator Men's Convention

(Continued from page 9a.)

success of a district group. Charles Walker, superintendent for Archer-Daniels-Midland Co., Council Bluffs, Iowa, also spoke on the society, its activities and its contribution toward the better operation of grain plants.

PROBLEMS OF OPERATION

Jerry Lacy, of the West Central Co-operative, Omaha, put forward some points in connection with the maintenance of electrical equipment. Only about 10% of electrical troubles were unavoidable, he maintained—the rest could be eliminated through proper care and inspection of facilities. Many electric parts were becoming scarce, he warned, and he suggested a check of equipment now while repairs were available.

The drying of grain, introduced in a talk by Robert Land, of the Omaha Elevator Co., launched a wide discussion of this subject, which is of high significance in the proper keeping of grain. Climate, length of storage and quality of grain were described as having a bearing upon the moisture content to which grain must be dried.

An extremely thorough address on the already discussed subject of plant protection was given by Emil Buelens, of the Glidden Co., Oak Park, Ill. Mr. Buelens described standard methods of personnel inspection, visitor control, fire prevention and so on, saying that the ordnance division of the army would, upon request, send inspectors to help in the establishment of such a system. Charles Grossman, of the Scoular-Bishop Grain Co., Omaha, went into the details of dual grading, and H. L. Heinrickson, of the Terminal Grain Corp., Sioux City, Iowa, discussed venting. He said that 90% of the dust explosions suffered by grain elevators started as minor explosions in elevator legs, and that this dust could inexpensively be removed by properly designed vents.

SAFETY PROGRAMS

H. C. Brand, superintendent for the Quaker Oats Co. elevator at Cedar Rapids, Iowa, brought up the safety problem with the statement that in 1940, 18,000 men were killed, 90,000 permanently injured and 1,900,000 slightly injured through industrial accidents. A billion and a half man-hours were lost through this cause, he said. He outlined the various means which may be employed to increase safety in operation.

THE ENRICHMENT PROGRAM

The grain man has so far been little affected by the enrichment program. James M. Doty, of Merck & Co., Inc., outlined for the convention the essentials of the enrichment movement and pointed out that although there is no immediate need for the elevator man to consider the binning of wheat in respect to its vitamin content, such a consideration might be necessary in the future. He outlined the different vitamins and explained variations that exist in the vitamin contents of various wheats. Since some wheats are particularly high in certain of the vitamins, he felt that further research might reveal the feasibility of selecting wheat on that basis. If the miller should want it, the elevator men would have to provide it, he said.

Glenn H. LeDioyt, of the Nebraska Crop Improvement Association, and K. S. Quisenberry, of the U. S. Department of Agriculture, discussed crop improvement work and new wheat varieties. Richard E. Miller, of MILLING PRODUCTION, Minneapolis, read a paper concerned with the year's infestation problem, and Oscar Olsen, Duluth Terminal Elevator Co., Duluth, reported upon work of the safety committee.

Election of officers placed Gilbert Lane as president, R. B. Pow as first vice president, and H. C. Brand as second vice president. Dean M. Clark, Chicago, was re-elected secretary-treasurer. It was decided that the next convention of the association will be held in Chicago, March 25-27, 1943.

Paul Christensen presided at the banquet, entertainment for which was provided by allied members of the society. "Extras" in this line included corsages for the ladies (the presentation of Screw Conveyor Corp., Hammond, Ind.); and an after-the-dance snack in the rooms of H. H. Arendall, of Innis, Speiden & Co.

One of the features of the banquet was the awarding of the safety trophies, which went to the following firms: Republic Elevator, Minneapolis; Rosenbaum Bros., Omaha; Farmers Union Grain Terminal; Brooks Elevator Co., Minneapolis; Ralston-Purina Co., Kansas City; Quaker Oats Co., Cedar Rapids; Peavey Duluth Terminal Elevator, Duluth; Occident Terminal Elevator Co., Duluth, and Quaker Oats Co., Akron.

Minneapolis led other cities in the number of superintendents who made the trip to Omaha. Most of the Minneapolis men who attended are shown here. From the left they are: Joseph L. Widstrom, Archer-Daniels-Midland Co; Cliff McIver, of the same concern; Vincent Shea, Van Dusen Harrington Co; Clarence Bach, Twin City Trading Co; Paul Christensen, Van Dusen Harrington Co; Victor A. Reid, Hart-Carter Co; F. Maynard Losie, Hallet & Carey Co; H. H. Van Ornum, Hart-Carter Co; James Auld, Hales & Hunter Co; E. J. Raether, Minneapolis Chamber of Commerce, and R. B. Pow, of the Reliance Grain Co., Ltd., Fort William Ont. Although Mr. Pow isn't from Minneapolis, he comes from the same general direction. He was elected first vice president of the society.

Small Mill Operation Today

By S. H. Stoltzfus

THE future of the "small mill" could be foretold, if at all, only by a prophet having supernatural vision, for although much that has occurred to alter its position during the past forty years has been due to economic developments which nothing could have prevented, it is still possible that the owner could have met changes with a higher degree of success than has ordinarily been the case, in which event the future at the beginning of this century might have been written in somewhat different words. And if this is true, the future from this time on will also be affected in at least some measure by the men who now own and operate small mills and those who, in spite of what seems a dark outlook, establish themselves in that field.

Perhaps it is impossible to define a "small mill" to the satisfaction of all concerned. In a paper read at the annual meeting of the American Millers Association in 1938, it was stated that a half century earlier the mill with a nominal capacity of 200 bbls per day was a large mill, the "small" mills ranging as low as 15 bbls. It was suggested in that paper that mills below 200 bbls might be considered small nowadays, and no argument was offered to the contrary. Whether this differentiation is fully justified or not is problematical, however, and it may be that methods of production and merchandising are more important than potential capacity in connection with establishments with comparatively low capacity ratings.

A professional writer might produce an interesting saga dealing with the rise and decline of the small mill in the United States—provided he did not draw too much on fancy and too little on fact. In the pioneering days of this country the settlement of new communities was always accompanied by the building of small mills, largely because of poor roads and inadequate transportation facilities. A day's journey by mule or by ox team frequently determined the maximum distances between mills. This situation persisted for a surprisingly long time in some parts of the country. We may think that "pioneering" in the sense used above was practically over when the 20th century arrived, but it would be a mistake to suppose that the customs and facilities established long in the past had disappeared entirely.

A personal experience some forty years back on the calendar will serve to illustrate this. A chilly midwinter evening found me in a small county seat town twenty miles from the nearest railroad, in one of our southern states bordering on the Atlantic. After supper at the only hotel in the town I strolled over to a nearby general store, since I had nothing else to do. Sitting around a big wood-burning stove were several men who seemed to be principally engaged in loafing.

When I made inquiries concerning a possible mode of transportation to the nearest railway station I was evidently labeled a suspicious character, a "Yankee" and probably a "revenuer," and co-operative information was conspicuously absent. However, in those days I was young, persevering and as friendly as a pup, and I didn't give up. Presently I was asked pointedly about my business, which was not surprising, since "moonshine" was an important product of that part of the country and anybody suspected of being a U. S. Revenue official was naturally unpopular. When I told them that I was representing a mill-building firm "up North" and had been sent to start a flour mill just completed for a Mr. Jones, that I had finished my work and wanted to get over to a place located on the Southern Railway, where the erection of a new mill was contemplated, the tension lessened.

I explained that a shortage of time and a lack of transportation facilities was the reason for my stopping in their town over night, and mentioned that I had been born and "brought up" in East Tennessee, near Knoxville, and hoped to visit my old home before returning North. Reticence shortly gave way to open friendliness, and without asking any questions at all I was told that the owner of the store was thinking about building a flour mill himself.

Someone went to find Mr. Smith, the proprietor of the store, who told me that a representative of a competing mill-building firm had been there a week before and was expected back within a few days. I found that the mill was to be located on a creek about two miles out of town, and was to be operated by water power. Its capacity would depend upon the power available, and the first thing to be done was to make a preliminary survey of the proposed site.

As the town was a county seat, I was able to get from the county surveyor a transit, a level and a drafting board,

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and with the aid of the prospective mill owner and several other willing helpers I made the survey the following day. After returning to the hotel I got busy and worked up plans and specifications for a four-stand flour mill, with its auxiliary equipment. This included, as was usual, a buhr stone for meal and a disc mill for feed making. The contract was completed and signed the following morning.

Courtesy and hospitality were not mere bywords with those people, as their genuine interest in my work demonstrated. Before I reached the station on the Southern Railway, for which I was heading when I went into that general store to kill a little time, I sold four mills, two with four stands and two with three, with the usual auxiliary equipment. I was told about several other contemplated mills, many of which I learned later were built, but it was necessary for me to get to my original destination. Finishing up there, with a contract for a six-stand mill, I was told that another contract was to be let in a Virginia town not very far away. There a competitor "beat me to the draw"—or, more accurately, to the contract.

Twenty years later I had occasion to pass through some of the territory that was the scene of my earlier experiences and in which a large number of small mills had flourished for some time. With very few exceptions they were idle. I drove over well-improved roads, and at frequent intervals prominently displayed advertisements indicated that nationally known brands of flour and feed were on sale at nearly every hamlet. . . . The cycle of small mill building, such as that I have

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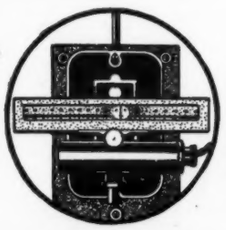

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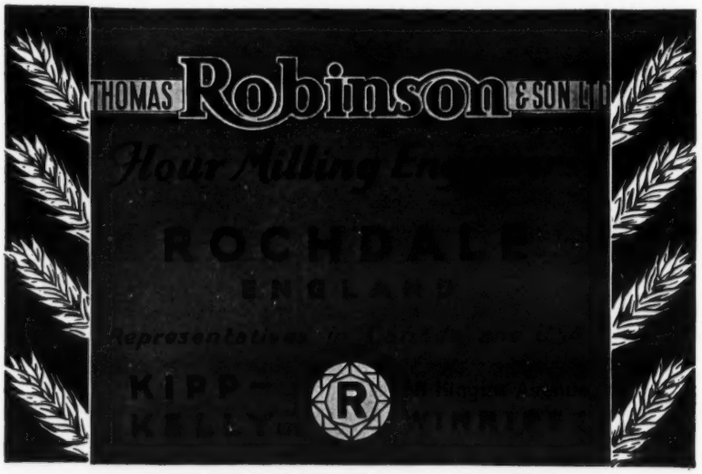

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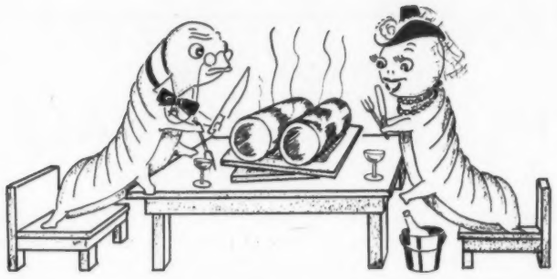
described, is passed. Can it—and should it—be revived? Probably not. But this does not mean that relatively small mills which are well placed and well managed have no place in the present economic picture. They have, and many are being operated and are prosperous, in a degree. Greatness of size is not a guarantee of efficiency, either of production or of merchandising, for when a concern gets too big there is likely to be some lost motion somewhere along the line. Lost motion is always a waste of time and effort, and just because it isn't so noticeable in a big organization as in a small one doesn't signify that it isn't waste.

If you will take the trouble to notice the places of business at which nationally advertised flours and feeds are sold in villages, hamlets and small towns, you will find that not a few of them are small mills—or once were. Did these ever manufacture and offer for sale the types of feed that are in demand today? Almost certainly they did not. could they do so now? To a large extent, yes. Of course certain expensive equipment would have no place in the really small establishment, but it is always possible to purchase the products made on such machines for resale, probably mixed with certain products that can be made as well and as cheaply as they can be purchased.

Of course the owner of the establishment cannot expect to make flour that he can sell in competition with "the big mills" unless a good deal of care is taken in the milling of it, in packaging it, in keeping it clean, and in merchandising it. In some respects it is often possible to offer flour locally milled that is better suited to the needs of local buyers than "imported" flour, and usually there is an advantage to be had in the disposal of millfeed. I am confident that if the owner of a small mill will seriously analyze his problems, both those concerned with the mechanics of production and those having to do with merchandising, securing helpful advice from authoritative sources, ways for putting the business of many on a profitable basis can be found.

——BREAD IS THE STAFF OF LIFE——

"Some extravagant things have been said for and against purifiers, and a few mills are still being operated without them; nevertheless, by far the greater percentage of the milling capacity of the world employs them."—Vol. 1, Flour Milling Technology (British).



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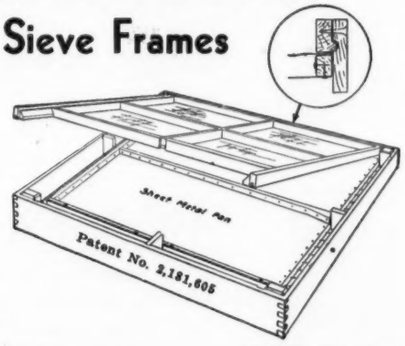

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Use of this cloth means quite a lot to me, because there are eight of us in our family and we use all the way from 24 to 30 sacks of flour a year.

I thank you mentally every time I wash a sack.

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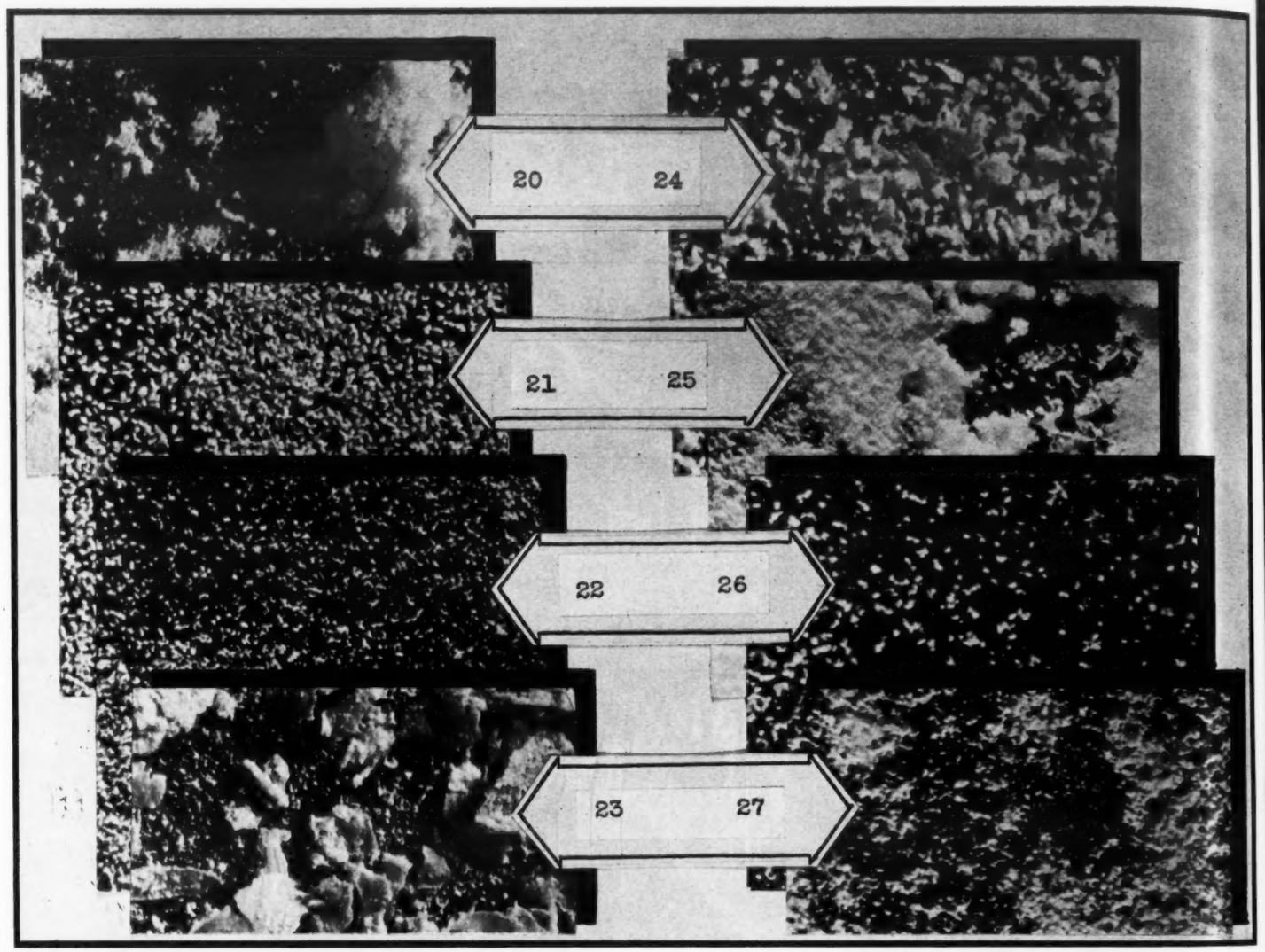


PRODUCTS OF MILLING OPERATIONS

PART FIVE

THE flour in the photograph numbered 20 *could* have been bolted out by the sifters operating upon stocks of the first, second and third break rolls, for that is where the material going to the dusting section—of which pictures 20, 21 and 22 are the products—originated. But the branny layers of break stocks are, necessarily, moist. They create conditions of humidity that are not ideal for bolting. So the throughs of the 9XX on first break, and the overs of the 12XX on second and third, are routed to the dusting section. The resultant flour has an ash of .426—and there are 6.35 parts of bran to 100 parts of bran and endosperm material. For a picture of such bran unreduced, take a look at picture No. 22, the fine dusted middlings of the sizings section, which are on their way to the third middlings "fine" rolls. Their ash—and consequently the parts of bran per 100 parts of bran and endosperm—are identical with the dusting section's flour. With the flour it is, of course, impossible by a photograph to see the bran, but a close examination of the fine middlings will reveal tiny strips of bran curling around the middlings.

The middle separate of the section, No. 21, is medium middlings which will be sent to Purifier 8. With an ash of .476 and a bran count of 7.2%, the bran particles that will be lifted by the purifier (if everything is working correctly) are easily discernible.

Stock No. 23 is the scalp of the fourth break. It looks fairly clean, but the ash figure—5.143—indicates that there are 79.75 parts of bran to a total of 100 parts, meaning that there is quite a lot of endosperm left. (Incidentally, it's hard to get off. The fifth break scalp ash figure, 5.14, reveals that there is about 18% of endosperm remaining on the bran there—and the only place left to remove as much of this as possible is the bran duster. But we'll get involved with that later.)

The coarse middlings to Purifier 7 (No. 24) show both visual and arithmetical evidence of containing good middlings to which bran is attached. Sent to purifier 7, most of the loose bran will find its way to the shorts duster, while the largest middlings will travel to the "second quality" rolls. The ash of stock No. 24 is 2.00; the percentage of bran, 29.85.

The fourth break flour—No. 25—is much higher in ash than that bolted out by the dusting section. The figure is .548, and the bran percentage has jumped to 8.17. The flour reduction on fourth break is 4%.

Stock No. 26 is medium middlings directed to Purifier 7—the same destination of the coarse middlings shown as No. 24. Purification will send the better of these fine middlings to the fourth middlings rolls, through the 72 of the purifier. There are 10.3 parts of bran in the stock, which has an ash of .690.

The fine middlings, No. 27, are sent direct to fourth middlings rolls without purification. Their ash is relatively low —.550—and the parts of bran figure is 8.21.

Enlarged photographs of stock create odd "optical illusions." For example, in Stock 24, the scalp of the fourth break, there is a piece of bran which exactly resembles a wheat berry. In fact, one's first impression is probably that a small, but nevertheless whole, berry has escaped the teeth of four sets of break rolls and passed over the scalping cloths as good as new. But that, of course, is erroneous. These photographs are six-time enlargements. A wheat berry of average length would be from 1⅛" to 1½" long in the enlarged pictures. So the picture isn't that of a wheat berry, but a small strip of bran so clipped that a depression appears similar to the crease of a whole berry.

That reminds us that even were wheat actually enlarged six times its normal size, the entrance to the crease would still be small—perhaps an average of one sixteenth of an inch. It's still hard to figure out a way to remove the crease dirt, because one sixteenth of an inch is too small a field for operation with a pick and shovel. And that's the only way which occurs to us at the moment to remove this material.

——BREAD IS THE STAFF OF LIFE——

"Since one of the functions of reduction rolls is to 'purify stocks by flaking impurities, the use of reducing devices which will not flake at all is out of the question so long as small offal particles are present in any amount in the stocks to be reduced. Probably no stream of middlings or flour is absolutely 'pure,' and various attempts at flouring middlings with various devices incapable of crushing them (and thus forming flakes more or less easily broken up again) have been made without conspicuous success."
—"Studies in Practical Milling."

Infestation

(Continued from page 11a.)

is put into the house before insect precautions must be taken."

And the outlook for the future is for more of the same. A large amount of last year's crop has been held on the farms. A tremendous mixture of new crop and old may be expected when crop movement again gets under way.

And what's the answer? A strenuous policy of insect control. All that's necessary now is the knowledge of how best to control the bugs, plus the wherewithal to apply the treatment.

Not even experts who know what they're talking about have ventured to assert that any one substance or method is best for the eradication of insects. It is true that most of the fumigants on the market, for example, have distinctive properties that might conceivably make them more suited for one purpose than for another, but it's just as true that most of them are used for a variety of work and that they do the jobs well. Unfortunately true also is the fact that in the past fumigants which are not reliable have been sold, and that they will undoubtedly be sold in the future. The purchaser can only weigh the priceless ingredient about which we've all heard so much.

While it is not possible to state definitely that any one type of gas, for example, is most effective, it is common sense that dictates this assertion: the best method of insect control is that which uses a good product, and uses it economically and correctly.

For example, there's no more lethal substance to insect life than air—plain air—so long as it's cold. Properly applied, the cold air treatment is bound to kill all the bugs, and bugs-to-be, present in a shipment of grain. But how often can this treatment be properly applied? The answer is—seldom.

A necessary ally of the cold is time—time which must be allotted for an exposure sufficient to penetrate the grain mass and kill the larvæ or eggs that may be present in the grains themselves. The cold treatment can therefore be an expensive one, because any money spent uselessly is spent "expensively." This doesn't mean that cold is not often an effective weapon against infestation: it does mean that often it is *not*. The elevator cannot wait upon the whims of the weather. And whims of the weather don't worry about elevator men. They are largely responsible for the insect situation which exists today.

Therefore, when there is not sufficient cold to insure protection against damage—and loss of grade—because of insect activity, some other means must be used. Experience has shown that fumigation with any of several gases is the cheapest and most certain way to prevent trouble. Adequate fumigation can, in fact, bring grain heated by insects back down to a normal temperature. And when weighed against the cost of frequent turning it becomes a not very expensive measure. Certainly it is not expensive when it eliminates out-of-pocket loss because of damage which might easily be sufficient to result in a lowering of grade.

Fumigation of incoming grain alone, however, has not been found to be the complete answer to insect control. Insects which infest grain are a remarkably adaptable lot—they make themselves at home almost any place. Because of this, not only the grain, but all the elevator facilities, should be subjected to scrutiny, and, perhaps, treatment.

Past months have seen increasing activity on the part of the Food and Drug Administration in connection with flour infested by or contaminated by insects. The resultant flour seizures have made the milling industry keenly aware that every possible measure must be taken. Recently, it has been agreed that the miller cannot be blamed for infestation that originates with flour after it has left his hands, but the difficulty has been to prove that it was *not* so infested before leaving the mill. The result has been this: more frequent inspections of mill premises by department agents. A miller whose plant is given a clean bill of health is not likely, of course, to be called to the mat when an infested shipment is seized, but the miller that has not followed good housekeeping rules must expect opposite treatment.

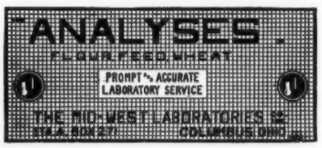
This situation has brought about a proposal by the Millers National Federation that regular systems of inspection by mill, warehouse and elevator superintendents be inaugurated, and that the results of these inspections be reported to the management periodically on special forms. A suggested form for the mill elevator asks these questions:

What date was the railroad dump last cleaned? Was there evidence of infestation? When was the truck dump pit last cleaned, and was there evidence of infestation there? When were elevator boots last cleaned? Were insects present? When were the tunnel or basement, the tripper floor, the head house and scale floor last cleaned? What about screenings and elevator dust? Where are they stored and is there evidence of infestation in them?

One section of the report asks for information about the condition of the grain in each bin. What was the temperature? Was there a noticeable odor, or evidence of heating? When was the bin last turned? When fumigated? And finally, the superintendent is asked to take a sample of specified size from each bin to check for infestation. The number of insects per sample must be given.

All of this may seem a great deal of trouble, particularly for the terminal elevator, which probably has no direct contact with the food and drug officials. Still, there are several points to consider. Instead of being faced with a surplus of food, this nation and our allies may need every bit available in coming months or years. Serious infestation actually lowers the food value of grain—it destroys the food.

Inspections of mills and mill elevators are a reality now: perhaps tomorrow the terminals will also be gone over by



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NEW METHOD OF MIDDLINGS PURIFICATION

Provides Exacting Classification of Stock!

New In Principle — New In Results!

The PUROGRADER

EARLY ELIMINATION OF FREE IMPURITIES Enhances Quality of Finished Product!

One of the features of the new Purograder appealing strongly to millers everywhere is its exacting control of separations. Middlings stock grades are separated according to weight and size differences and consigned to different outlets in the machine. The accuracy of the classification enables the operator to send lighter, branny materials directly to feed and to spout other grades as the milling system requires. This early elimination of loose, branny particles or beeswing permits a longer extraction of high quality patent; eliminates a larger percentage of material of high ash content before it pulverizes and bolts through; promotes general all-round improved quality of flour. Selections are controlled by adjustment of easily accessible selector control knobs. Separations are clearly visible. The entire purifying and classifying job is handled smoothly and without complication.

Purifies Without Drying—Reduces Power Load on Rolls

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Air is so efficiently used and is so effectively controlled in the Purograder that only a fraction of the volume of air ordinarily required for purification is needed. With less air used, there is much less drying of stock. Middlings are more mellow; less roll power is required for further reduction. Sieves, conveyors and sieve cleaners are entirely eliminated; smaller and more economical equipment can be used to handle the reduced volume of air. The Purograder is moderate in its power requirements, dustless in operation, easy to keep clean. Write for facts on this amazing new development now!

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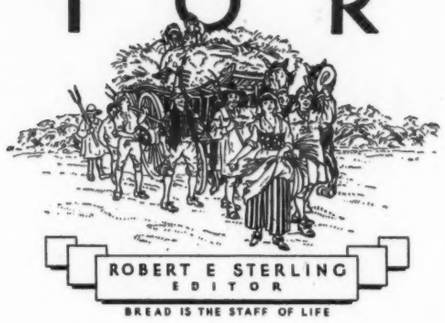
EDITORIAL



DELUSIONS

WHILE, in the light of several decades of well-recorded experience, it seems safe to assume that the arrival of peace will put an end to most of the present flood of well meant but misguided efforts to find some sort of phoney bread which will save mankind from continuing to poison itself with the white loaf, there is much that is, at least, amusing in the current recrudescence of nutritional crackpots. Each of them is so exceedingly eager to promote his own particular theory of upending bread so that people may be more rugged, that the wars may be won and civilization saved, or merely that he himself may win fame or profit, that they fairly outrun themselves in eagerness to promote their several causes.

Britain, which has taken the lead with its "wheatmeal loaf," probably has better reason than any other of the Allied Nations to compel the eating of emergency bread. Yet even in Britain there is a certain falsity in the measures employed to overcome consumers' protests against being denied simple white bread. In instance, the staid old *London Times*, which a considerable time ago yielded to the persuasions of chief dark bread promoter, Sir E. Graham-Little, recently had this to say in support of the campaign:

> "The 'austerity' which is now imposed upon the nation is not only modest, it is self-rewarding, since the higher nutritive value of wholemeal is undisputed. Mechanical changes in the milling industry are rendered necessary, and there is a loss of animal feeding-stuffs. But these objections have not weighed against the saving in our inward wheat shipments and the dietetic improvement which will result from the change. Our small sacrifice may even be of indirect help to Russia. It falls largely upon Canada to make good the deficiencies in Russia's future grain provision due to the loss of the Ukraine; and the Canadian Government is understood to be about to recommend an increase in prairie wheat acreages largely to meet this requirement, though shipping space will, as usual, be a limiting factor."

These statements may not be passed by as merely naive. They are quite simply, if unintentionally, untruthful. The idea of the eating of whole wheat bread in Britain being of any aid to Russia is altogether absurd. Equally so is the *Times'* understanding that the Canadian government proposes to increase the prairie provinces' wheat acreage to compensate for the lost Ukraine, even though it mentions a minor matter of shipping space having something to do with the complete efficacy of the scheme. In the same class is the *Times'* statement that the "higher nutritive value of wholemeal is undisputed" in face of the fact that it is most vigorously disputed both by history and a considerable sector of high nutritional authority. We by no means wish it, but are nevertheless confident that sad experience will, in due time, demonstrate to the people of Britain that the question of the health-promoting merits of coarse bread is substantially more than merely debatable.

We recently have observed this same not altogether innocent confusion of theory with fact in the Canadian promotion of "approved" bread. In that nation no question of economy is involved, the support of the other-than-white loaf coming almost wholly from nutritional reformers, much of it deriving from their own theories, sometimes with a trend toward being self-serving. Economically considered, were these dark bread exponents in both Britain and Canada to have their way and the whole world thereafter to be converted to the merits of coarse bread, when peace some time returns to the world nations now of the British commonwealth, notably including Canada, would find themselves lacking a market for the bread harvest from millions of acres of their farming lands.

If, finally, we turn to this country, we find this same lack of clear truth present in most of the bread reform movements proposing some change toward darker or coarser bread. This is not, of course, true of the little group of nutritional authorities who have so successfully promoted enrichment of simple white flour. But it is true and, so far as our recollection goes, always has been true of every effort to promote use of branny bread. Furthermore, we can recall no instance in this country where the profit motive has not been the real mainspring of efforts to persuade people to eat some sort of trick bread in the hope that it will make them healthier, wiser or even more patriotic.

——BREAD IS THE STAFF OF LIFE——

CARL WARKENTIN

WHILE quite clearly the result of momentary impulse, the tragic death of Carl Warkentin a week ago was understandable to his closest friends who have for several months past observed his courageous spirit slowly but surely yielding to the blows of ill health in a time when hard days in the world increased his always stern sense of duty and responsibility.

Normally a man of sturdy body and sound and vigorous mind, Mr. Warkentin was at heart sensitive to the point of timidity and exceedingly reserved. Giving without stint of his unlimited store of friendship and affection to those about him and always eagerly carrying more than his fair share of the load, he nevertheless was of retiring habit of mind, almost reluctant to have even his closest friends actually aware of his thoughts and feelings.

Thus, when he realized that lost health made it no longer possible for him to keep on singly shouldering the burdens of those about him, or even confidently to carry on with his own, even his great courage simply was unequal to the unaccustomed strain.

There almost certainly never was a gentler or kindlier man, nor any held in greater respect and affection by those near to him. This was especially true of his business associates, even including the most minor employees, many of whom had been his valued personal friends through long years. His consideration for them always was first in his thoughts and plans.

Mr. Warkentin's position as a lifelong miller and his services to the industry through the years, like his standing in the communities at Newton and Kansas City where he spent his full, rich and useful life, require no emphasis.

——BREAD IS THE STAFF OF LIFE——

REGISTERING FOR SUGAR

LAST week we stopped by the schoolhouse and registered for our sugar ration. We could, of course, have gotten our name, age, sex and color of eyes and hair enrolled in the sugar census without personally appearing before the women of our neighborhood seated behind a formidable array of tables. But we wanted to see American civilian life in the trenches. We did and we were impressed with the thoroughgoingness of it, of literally scores of volunteers serving through long hours; of the equipment provided, enormous quantities of pads and blanks and pencils of various colors and of scissors. We never saw so many scissors.

If it took, as we have been told, four hundred carloads of paper to provide space for all of the printed details about people who claim right to half a pound of sugar a week, we simply could not picture what quantity of scissors must have had to be provided. Additional to those scattered about the long tables, there was a great rack of them, apparently fifty or sixty pairs. And as our mind pictured the thousands upon thousands, probably tens of thousands, of other schoolrooms with people similarly engaged in recording the sugar hunger of one hundred and thirty million people, it simply came to a dead stop when it tried to envision what so many scissors would look like all in one great pile. Millions and millions of pairs of scissors, more scissors surely than ever anywhere in the world before, and every one engaged at the same time in exactly the same task—clipping off little numbered squares against whatever sugar applicants for favor confessed, under heavy penalty for lying about it, to having at home.

What an almost incredible picture! Millions upon millions of patriotic women volunteers, scores of millions of loyal citizens, all complying with the law by moving slowly alone the line confessing to their ages and their sugar and all the time that background of snip, snip, snip continuing through the long hours until far into the night.

But when we had gone to three separate tables having to do with the routine and finally gotten our book of tickets, we were not quite sure how we felt about it. Patriotic certainly, but also some way puzzled, perhaps a bit cramped as if we were not quite constitutional or something, and more than all else wondering if this was one of the things necessary to marching on to victory or if it actually was, as we are told, an effort of authority to render absolutely even-handed justice to all in the matter of sugar. We recalled, too, how one faithful volunteer, the minister's wife, said it seemed rather like the hard way, even if it were at all necessary and especially emphasized that the color-of-eyes business seemed pretty silly to her.

We could not put her down as any kind of column member, but we did have a feeling of being in the presence, however pleasant, of sedition. Yet we retired proudly, much as we always feel on election day, with our sugar ticket in our pocket and the happy realization that, come good or ill, our own personal consumption probably does not run to half a pound a month, so we are sitting on top of the world. Oh, oh, we forgot the mint bed, already lush and green, and more than a hint of summer in today's breeze.

——BREAD IS THE STAFF OF LIFE——

CONFUSION—ERROR—CORRECTION

IN our issue of April 8 a properly authenticated news story stated that defense stamps and bonds could not be used as trade premiums and quoted the Retail Advisory Committee of the Treasury Department as saying:

> "Defense stamps and bonds should be sold for cash or on the salary deduction plan only. Under no circumstances should defense bonds or stamps be used as premiums, discounts, gifts, trade stimulators, or be in any way associated with the promotion of merchandise."

This was correct and perfectly proper news at the time of publication. It turns out, however, that the Treasury's Retail Advisory Committee has no authority whatever to bar anything. After it had aired its views, the matter was referred to the manufacturers' committee, which thereupon expressed an opposing opinion. This was approved by another administrative official and thereafter an official ruling by the Treasury Department held that war bonds and stamps may be treated the same as money and may be used for trade premiums or any other legitimate purpose, so long as the Federal Trade Commission does not question them as unfair trade practices.

So there we are and we enter this apology on behalf both of ourselves and of the Department of the Treasury, which merely jumped about a bit. Kind of an ickieism.

officials. And another thing to consider is this: infestation is controlled both by fumigation and good housekeeping. But regardless of infestation, good housekeeping is sound practice. For one thing, accidents don't happen so easily in clean, orderly plants. And for another—it's difficult to have a serious dust explosion when the dust that clings to floors, walls, ceilings and machines—the dust which, when jarred loose by the primary and perhaps small explosion, provides ammunition for the major blast that so often follows—is nonexistent.

Subdivision

(Continued from page 4a.)

surface seems justifiable. The illustration emphasizes the enormous increase in surface when dough is baked into bread.

The above may seem to be founded on too much speculation and flight of fancy—too imaginative to be practical. But some understanding of surfaces in bread and flour is essential in visualizing many of the quality problems, and there is much positive evidence that the figures arrived at are not extravagant. Why do higher protein flours have a greater capacity to take up more water, and consequently produce more bread, than low protein flours? While there are several factors involved, the surface factor is one of the most important. Why is the milling of grain the oldest mechanical art? One of the first lessons man learned when he started to use grains as a food was that unless this grain was crushed, either by chewing or grinding, it was not properly digested. This is even true today in stock feeding. Much of the whole corn fed to cattle passes through whole. Other animals such as hogs and chickens may be used to save the feed value of the droppings, but this does not alter the facts set forth.

The chemical reactions involved in the digestion of food take place at surfaces. Hence the importance to assimilation of large surfaces in proportion to mass. The process of digestion is one of disintegrating the food materials into the small units which can then be used for the production of energy or to build the body substances, and the enzymes, which are the tools of the digestion process, do their work on surfaces. The milling of grain is the first step in the preparation of these surfaces, and the baking of wheaten flour into bread is the second step in human nutrition. This is followed by mastication and the activities of the enzymes. In all these processes surface areas play an important role.

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——BREAD IS THE STAFF OF LIFE——

Roll Exhaust Systems in Large Mills

IN large plants it is common practice to provide separate exhausting systems for different groups of rolls and introduce the materials from dust collectors into different sifter sections or reels for grading and bolting.

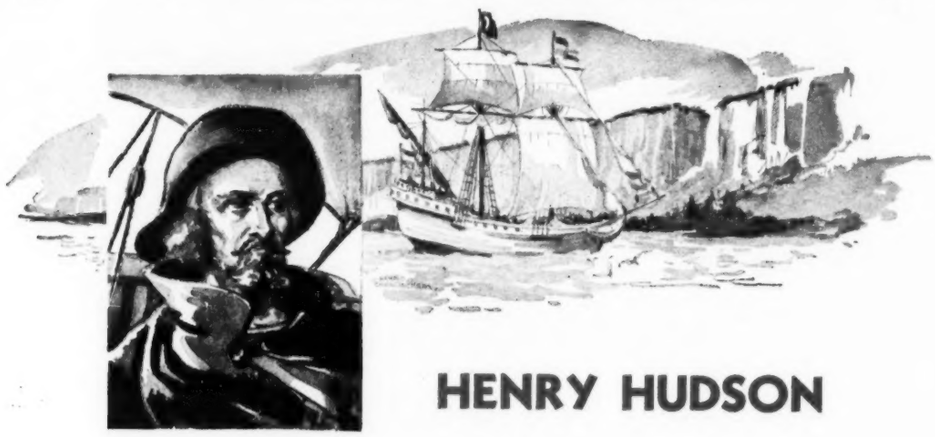
For example, the suction stocks from the rolls reducing clean middlings and producing streams suited for "short patent" naturally contain a lesser percentage of impurities than do the recoveries from break rolls and rolls operating on tailings and tail-end reductions. These better stocks may be sent to the sixth middlings section or sections, passing by the rolls.

In this way the flour recovered can be included in the first clear stream. The "poor roll suction," and the products of the purifier dust collectors, are often treated together on a sifter section of their own in mills of from about 800 bbls up.

——BREAD IS THE STAFF OF LIFE——

"The atmospheric conditions in the mill will also have an influence on the yield because of their effect on the rate of evaporation. The more water there is in the atmosphere in relation to the moisture holding capacity and the slower the air movements, the less will be the evaporation. The converse is also true, or the less the moisture and the more rapid the air movements the greater will be the evaporation. This will either increase or decrease the effects of the original moisture content of the wheat, as well as affect the moisture per cents of the products. That is, the moisture conditions in the mill or milling machines may very substantially influence the magnitude of the percentages of the various products."—C. O. Swanson, in "Wheat and Flour Quality."

★ ★ THE PARADE OF THE PIONEERS ★ ★



HENRY HUDSON

Washington Irving told us that when it storms Henry Hudson still plays tenpins in the Catskill Mountains. Certain it is that the spirit of industry, honesty and loyalty which the Dutch brought to America still is found wherever those sturdy people settled, and we can thank Henry Hudson for that.

A long time ago Swiss industry sent to America some of its finest workmanship, which was instantly recognized as superb material for the bolting of flour. SWISS SILK became the standard bolting cloth of American millers, and for over a century its honest quality and dependable craftsmanship have maintained its position as the top ranking bolting cloth of the milling industry.

Specify "SWISS SILK" ★

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Remove Nothing but Dirt—

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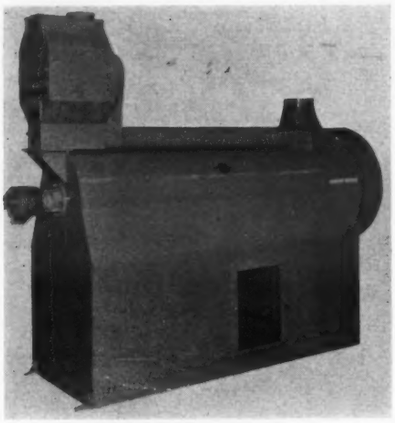


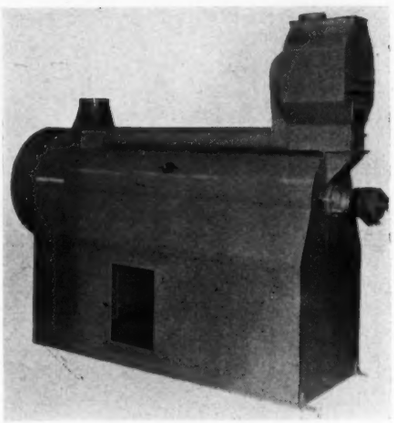
Wheat Scourer

V

ASSOCIATION of OPERATIVE MILLERS
Annual Convention
Seattle, Wash. — June 1-5

THE GRAIN YOU WILL BE GRINDING THIS SUMMER WILL REQUIRE EXTRAORDINARY CLEANING METHODS. FORSTER SCOURERS ARE ESSENTIAL MACHINES FOR AN ESSENTIAL INDUSTRY, AND ARE AVAILABLE FOR IMMEDIATE DELIVERY.

FORSTER SCOURERS



Corn Scourer

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THE WHEAT SCOURER—Removes all extraneous dirt and *saves* all that is fit for feed. Employing the "cyclone" principle, it strips the dirt off the grain without damaging the bran. FOUR DISTINCT SEPARATIONS BY ASPIRATION.

THE CORN SCOURER—Cleans corn in one operation. Removes all rotten grains and undesirable matter, all dust, all filth, all dirt of any description. Cleaned grain will PASS FEDERAL INSPECTION. FIVE ASPIRATIONS.

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HART-CARTER COMPANY

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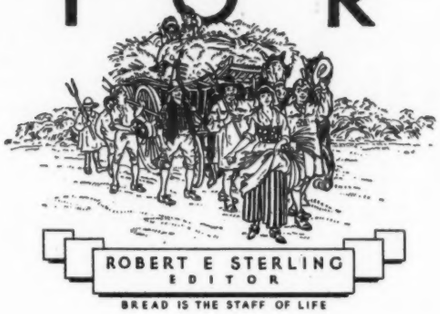
EDITORIAL



DELUSIONS

WHILE, in the light of several decades of well-recorded experience, it seems safe to assume that the arrival of peace will put an end to most of the present flood of well meant but misguided efforts to find some sort of phoney bread which will save mankind from continuing to poison itself with the white loaf, there is much that is, at least, amusing in the current recrudescence of nutritional crackpots. Each of them is so exceedingly eager to promote his own particular theory of upending bread so that people may be more rugged, that the wars may be won and civilization saved, or merely that he himself may win fame or profit, that they fairly outrun themselves in eagerness to promote their several causes.

Britain, which has taken the lead with its "wheatmeal loaf," probably has better reason than any other of the Allied Nations to compel the eating of emergency bread. Yet even in Britain there is a certain falsity in the measures employed to overcome consumers' protests against being denied simple white bread. In instance, the staid old *London Times*, which a considerable time ago yielded to the persuasions of chief dark bread promoter, Sir E. Graham-Little, recently had this to say in support of the campaign:

> "The 'austerity' which is now imposed upon the nation is not only modest, it is self-rewarding, since the higher nutritive value of wholemeal is undisputed. Mechanical changes in the milling industry are rendered necessary, and there is a loss of animal feeding-stuffs. But these objections have not weighed against the saving in our inward wheat shipments and the dietetic improvement which will result from the change. Our small sacrifice may even be of indirect help to Russia. It falls largely upon Canada to make good the deficiencies in Russia's future grain provision due to the loss of the Ukraine; and the Canadian Government is understood to be about to recommend an increase in prairie wheat acreages largely to meet this requirement, though shipping space will, as usual, be a limiting factor."

These statements may not be passed by as merely naive. They are quite simply, if unintentionally, untruthful. The idea of the eating of whole wheat bread in Britain being of any aid to Russia is altogether absurd. Equally so is the *Times'* understanding that the Canadian government proposes to increase the prairie provinces' wheat acreage to compensate for the lost Ukraine, even though it mentions a minor matter of shipping space having something to do with the complete efficacy of the scheme. In the same class is the *Times'* statement that the "higher nutritive value of wholemeal is undisputed" in face of the fact that it is most vigorously disputed both by history and a considerable sector of high nutritional authority. We by no means wish it, but are nevertheless confident that sad experience will, in due time, demonstrate to the people of Britain that the question of the health-promoting merits of coarse bread is substantially more than merely debatable.

We recently have observed this same not altogether innocent confusion of theory with fact in the Canadian promotion of "approved" bread. In that nation no question of economy is involved, the support of the other-than-white loaf coming almost wholly from nutritional reformers, much of it deriving from their own theories, sometimes with a trend toward being self-serving. Economically considered, were these dark bread exponents in both Britain and Canada to have their way and the whole world thereafter to be converted to the merits of coarse bread, when peace some time returns to the world nations now of the British commonwealth, notably including Canada, would find themselves lacking a market for the bread harvest from millions of acres of their farming lands.

If, finally, we turn to this country, we find this same lack of clear truth present in most of the bread reform movements proposing some change toward darker or coarser bread. This is not, of course, true of the little group of nutritional authorities who have so successfully promoted enrichment of simple white flour. But it is true and, so far as our recollection goes, always has been true of every effort to promote use of branny bread. Furthermore, we can recall no instance in this country where the profit motive has not been the real mainspring of efforts to persuade people to eat some sort of trick bread in the hope that it will make them healthier, wiser or even more patriotic.

——BREAD IS THE STAFF OF LIFE——

CARL WARKENTIN

WHILE quite clearly the result of momentary impulse, the tragic death of Carl Warkentin a week ago was understandable to his closest friends who have for several months past observed his courageous spirit slowly but surely yielding to the blows of ill health in a time when hard days in the world increased his always stern sense of duty and responsibility.

Normally a man of sturdy body and sound and vigorous mind, Mr. Warkentin was at heart sensitive to the point of timidity and exceedingly reserved. Giving without stint of his unlimited store of friendship and affection to those about him and always eagerly carrying more than his fair share of the load, he nevertheless was of retiring habit of mind, almost reluctant to have even his closest friends actually aware of his thoughts and feelings.

Thus, when he realized that lost health made it no longer possible for him to keep on singly shouldering the burdens of those about him, or even confidently to carry on with his own, even his great courage simply was unequal to the unaccustomed strain.

There almost certainly never was a gentler or kindlier man, nor any held in greater respect and affection by those near to him. This was especially true of his business associates, even including the most minor employees, many of whom had been his valued personal friends through long years. His consideration for them always was first in his thoughts and plans.

Mr. Warkentin's position as a lifelong miller and his services to the industry through the years, like his standing in the communities at Newton and Kansas City where he spent his full, rich and useful life, require no emphasis.

——BREAD IS THE STAFF OF LIFE——

REGISTERING FOR SUGAR

LAST week we stopped by the schoolhouse and registered for our sugar ration. We could, of course, have gotten our name, age, sex and color of eyes and hair enrolled in the sugar census without personally appearing before the women of our neighborhood seated behind a formidable array of tables. But we wanted to see American civilian life in the trenches. We did and we were impressed with the thoroughgoingness of it, of literally scores of volunteers serving through long hours; of the equipment provided, enormous quantities of pads and blanks and pencils of various colors and of scissors. We never saw so many scissors.

If it took, as we have been told, four hundred carloads of paper to provide space for all of the printed details about people who claim right to half a pound of sugar a week, we simply could not picture what quantity of scissors must have had to be provided. Additional to those scattered about the long tables, there was a great rack of them, apparently fifty or sixty pairs. And as our mind pictured the thousands upon thousands, probably tens of thousands, of other schoolrooms with people similarly engaged in recording the sugar hunger of one hundred and thirty million people, it simply came to a dead stop when it tried to envision what so many scissors would look like all in one great pile. Millions and millions of pairs of scissors, more scissors surely than ever anywhere in the world before, and every one engaged at the same time in exactly the same task—clipping off little numbered squares against whatever sugar applicants for favor confessed, under heavy penalty for lying about it, to having at home.

What an almost incredible picture! Millions upon millions of patriotic women volunteers, scores of millions of loyal citizens, all complying with the law by moving slowly alone the line confessing to their ages and their sugar and all the time that background of snip, snip, snip continuing through the long hours until far into the night.

But when we had gone to three separate tables having to do with the routine and finally gotten our book of tickets, we were not quite sure how we felt about it. Patriotic certainly, but also some way puzzled, perhaps a bit cramped as if we were not quite constitutional or something, and more than all else wondering if this was one of the things necessary to marching on to victory or if it actually was, as we are told, an effort of authority to render absolutely even-handed justice to all in the matter of sugar. We recalled, too, how one faithful volunteer, the minister's wife, said it seemed rather like the hard way, even if it were at all necessary and especially emphasized that the color-of-eyes business seemed pretty silly to her.

We could not put her down as any kind of column member, but we did have a feeling of being in the presence, however pleasant, of sedition. Yet we retired proudly, much as we always feel on election day, with our sugar ticket in our pocket and the happy realization that, come good or ill, our own personal consumption probably does not run to half a pound a month, so we are sitting on top of the world. Oh, oh, we forgot the mint bed, already lush and green, and more than a hint of summer in today's breeze.

——BREAD IS THE STAFF OF LIFE——

CONFUSION—ERROR—CORRECTION

IN our issue of April 8 a properly authenticated news story stated that defense stamps and bonds could not be used as trade premiums and quoted the Retail Advisory Committee of the Treasury Department as saying:

> "Defense stamps and bonds should be sold for cash or on the salary deduction plan only. Under no circumstances should defense bonds or stamps be used as premiums, discounts, gifts, trade stimulators, or be in any way associated with the promotion of merchandise."

This was correct and perfectly proper news at the time of publication. It turns out, however, that the Treasury's Retail Advisory Committee has no authority whatever to bar anything. After it had aired its views, the matter was referred to the manufacturers' committee, which thereupon expressed an opposing opinion. This was approved by another administrative official and thereafter an official ruling by the Treasury Department held that war bonds and stamps may be treated the same as money and may be used for trade premiums or any other legitimate purpose, so long as the Federal Trade Commission does not question them as unfair trade practices.

So there we are and we enter this apology on behalf both of ourselves and of the Department of the Treasury, which merely jumped about a bit. Kind of an ickieism.

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Vitamin B_1, B_2 (G) Riboflavin, and others. These are the vitamins made by nature—not drugs—and stored up in the wheat germ which is milled right into the flour.
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MELLOW CREAM CAKE FLOUR
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The Making of Millstones

From the *London Times*

AMONG the industries still doing a steady export trade is that of millstone making. The gradual disappearance of the English windmill as a "going concern" and the introduction of steel rollers for the production of white flour may have led some people to the belief that the millstone is a thing of the past; but there are many uses to which it is still being put, apart from the milling of grain—for example, the grinding of mineral ores.

In one sense the millstone is a thing of the past; for, as the cultivation of wheat is associated with the earliest development of civilization, so the millstone, in some form, has been used in all ages to reduce the grain to something resembling meal. It was at first nothing more than a hollowed-out sandstone, later developed into a pestle and mortar. Scattered throughout the Scriptures are numerous references to mills, mortars, and the grinding of corn. Livingstone was of opinion that the apparatus he found the natives using in Central Africa was similar to that which Sarah used in the preparation of wheaten cakes for the patriarch Abraham. Here is his description of it:

"The mill consists of a block of granite, syenite, or even micaschist, 15 or 18 inches square, about five or six thick, with a piece of quartz or other hard rock, about the size of a half brick, one side of which has a convex surface, and fits into a concave hollow in the large and stationary stone. The work-woman kneeling grasps this upper millstone with both hands, and works it backwards and forwards in the hollow of the lower millstone, in the same way that a baker works his dough when pressing it and pushing it from him. The weight of the person is brought to bear on the movable stone, and while it is pressed and pushed forwards and backwards, one hand supplies every now and then a little grain, to be thus at first bruised, and then ground on the lower stone, which is placed on the slope, so that the meal when ground falls on to a skin or mat spread for the purpose. This is, perhaps, the most primitive form of mill, and anterior to that in Oriental countries, where two women grind at one mill, and may have been used by Sarah of old when she entertained the angels."

From the hand-operated mill it was not a big step, once the upper stone had been fitted so that it could be automatically rotated in the cavity of the lower, to substitute animal-power for manual labour. For countless ages the grinding of corn had been regarded as a woman's job; in ancient Rome, when the original and simplest form of quern was introduced, the task of operating the apparatus was assigned to slaves, the work being regarded, for some reason, as especially degrading—perhaps from the very fact that it had formerly been done by the other sex. Then came the water-mill and the windmill. The former did not differ much in the days of the Romans, either in form or mechanism, from the small mills which existed in the remoter parts of Scotland and Ireland down to the early part of the nineteenth century. Nearly 200 years ago there was found in Yorkshire a pair of Roman millstones, one 20 inches in diameter and convex, the other concave.

Simple water-mills were for many centuries in use in Great Britain. The first hand mills probably date from the time of Ethelbert, King of Kent, who ruled from the year 560 to 616. A description of the type used in the Shetland Isles up to a century ago is given by Sir Walter Scott:

"The wheel is horizontal, with the cogs turned diagonally to the water; the beam stands upright, and is inserted in a stone-quern of the old-fashioned construction. This simple machine is inclosed in a hovel about the size of a pig-stye and there is the mill! There are about 500 such mills in Shetland, each incapable of grinding more than a sack at a time."

English windmills and water-mills for more than 700 years played an important part in the life of the countryside. In the "Chronicle of Jocelyn de Brokeland" is mentioned Dean Herbert's windmill, built in 1191 at Bury St. Edmunds, and this reference has been regarded as the earliest record of a windmill in this country. The claim was made in 1938 that Drinkstone Mill in Suffolk might easily be a rival to the claim of Outwood, Surrey, to be the oldest mill then existing. As for the water-mills, gone are the days when, as a writer in *The Times* put it, "the steady rumble of the wheel added a pleasant bass to the plash and tinkle of the sluice, when the whole mill-house vibrated to the trundling gear and the running stones, when the dusty miller and his loader, serenely busy at their prosperous work, gave the perfecting touch of human neighborhood to the scene."

The millstones which are now made may be divided into two classes—millstones constructed from natural stone, and artificial millstones. The former are usually made of Derbyshire Peak stone, quarried in the Peak district, and are mainly used for grinding barley and other cereals for animal feeding. Natural millstones are also constructed from what is known as French burr (or buhr) stone, a natural quartz type of stone quarried in the La Ferté district of Seine-et-Marne, France. These stones are roughly shaped into segments, and then built to form a complete millstone circle. They are used for grinding a very wide range of materials, such as stone-ground wheatmeal, mineral ores, oxides, pigments, &c., particularly where it is desired that the material being ground shall not come in contact with any metallic substances.

There is a large demand for French burr millstones from many industries engaged in the war effort. They are now built exclusively in this country by Messrs. W. S. Barron and Son, Ltd., of Gloucester, and Messrs. William Garner and Sons (1937), Ltd., of Millwall, London. Prior to the war considerable competition had to be met from makers in La Ferté, but now that this territory is cut off from oversea markets, these two firms are the sole source of supply for this country and for many of the markets in the Empire. Natural and artificial millstones are shipped in large quantities to Canada, Palestine, Iraq, Syria, and also to Australia and New Zealand.

In the case of composition millstones,

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UNIFORM QUALITY FLOURS
PLAIN AND SELF-RISING
Low cost laboratory controlled mill grinding all types of wheat
Pancake Flour—Cake Flour—Farina—Whole Wheat Products—Prepared Biscuit Flour
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BLACK BROS. FLOUR MILLS
1863-1941
FLOUR 1,000 BBLS.
STOCK FEED 250 TONS
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Manufacture Kiln-Dried
WHITE CORN PRODUCTS
Capacity, 16,000 Bushels

Mother Hubbard
FOR QUALITY FLAVOR AND ECONOMY
Flour Hubbard Milling Co.

"Golden Loaf" That's Our Brand—
The Flour with the Doubt and Trouble left out
TENNANT & HOYT COMPANY
Lake City, Minn.

the method of construction is to crush down lumps of the natural French burr stone, or else rock emery, to an even, granular shape and then to build the stones in a plastic state with a suitable mixture of magnesite cement and chloride. The plastic mixture is then run into a mould and allowed to set in a similar way to concrete. When the stone is sufficiently dry, and hard enough, it is removed from the mould and the furrows are cut as in the case of the natural millstones. The sizes of millstones range from a 10-in diameter, for use in small hand-power operated mills, up to 5-ft diameter, the larger stones being used for grinding barytes, colours, &c. The West Country firm also construct millstones in rock emery, bonded with a special spelter bond. These stones are used for grinding abrasive materials, such as silica rock, and there has been a big demand for them during the war.

The millstone, like the plough, has come down through the ages, improved, perhaps, but unchanged in principle. The millstone of 100 or 150 years ago appears to the layman little different from the one that is made today; while the handmills which Dr. Johnson saw in the Western Highlands of Scotland bear close resemblance to the remains of corn crushers found on the site of the ancient lake dwellings of Switzerland. There is today no difficulty in replacing a millstone; but in bygone days it must have been to the nomad what the horse was to the western pioneer, or his good name to Othello. "No man," is the injunction laid down in Deuteronomy, "shall take the nether or the upper millstone to pledge, for he taketh a man's life to pledge."

—BREAD IS THE STAFF OF LIFE—

Historic New Salem Mill Restoration Work Postponed

Restoration of the historic New Salem mill, scene of Abraham Lincoln's brief career as a mill hand, will probably not be completed until after the war is over. At any rate, the mill will not be in operation this year, the Illinois department of public works and buildings states.

The old grist mill on the Sangamon River, near Springfield, Ill., was to have been put in operation early this spring, but the war has set back its completion. The mill itself is all but completed, but much work is still to be done with the water supply before the mill can actually be run. The Sangamon River has altered its course during the years that have passed since the old mill was in operation. In order to run the mill rebuilt on the original site, therefore, it was necessary to build a mill pond to be supplied with water pumped from the river. The CCC camp which was working with the water supply was taken from the project last December, and funds to continue the work are not available.

The original mill was built in 1828 by James Rutledge and John Cameron, cofounders of the village of New Salem. Lincoln spent eight months operating it for Denton Offut in 1831-32. The original mill building was walled with giant logs with stone filling to add to its stability. It was operated by two large wheels, one to saw logs and the other to grind corn and smaller grain. Final construction approval of the project to rebuild the mill was granted by the federal government Feb. 21, 1939.

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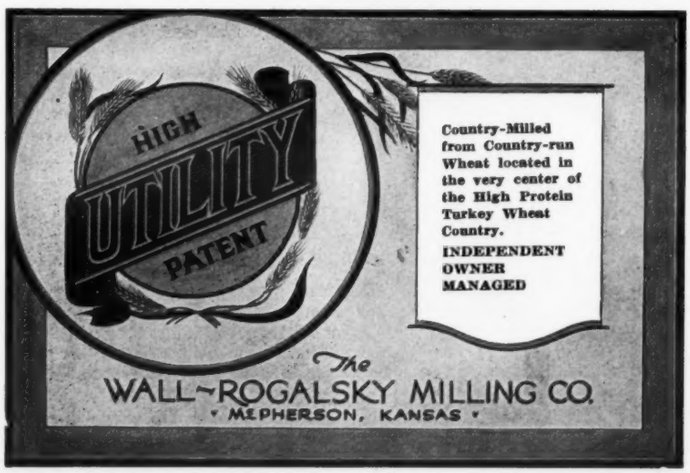
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Results of Alternative Ways of Flour Enrichment Studied

By A. H. BAILEY
Canadian Manager of THE NORTHWESTERN MILLER

TORONTO, ONT.—Canadian millers were much interested in the proceedings at the annual convention of Millers National Federation as reported in latest issues of the trade press. What was said and done about enriching flour was of special significance to Canada since this country has the same problem.

The solution presently in process of operation here is one of lengthened extraction whereas the United States procedure is based on voluntary synthetic fortification. It must be admitted that if Canadian millers could have their own way about this they would be just as unanimously for the American plan as were the millers who attended this convention in Chicago.

Now that alternative ways of securing a better vitamin content in bread are to receive a real test the results will be watched with interest by millers in all parts of both countries, in Australia and in Great Britain. Similarity between the compulsory plan of the British government and the voluntary one which has found favor in Canada makes it fairly certain that if one should fail to command the acceptance of public opinion the other will meet with the same fate. The difference is a matter of no more than a few points in the percentage of extraction, though the Canadian bread will be more nearly white than the British, a point on which the public has always set considerable store.

Irrational as it may seem, color is usually the factor which decides the preferences of those buying bread. Although for the time being the British public has no choice, it appears to be the accepted belief over there that given a choice, and especially one where the nutritional values are similar, white bread is favored just as decisively as in America.

——BREAD IS THE STAFF OF LIFE——

ONTARIO MILLERS STUDY POSSIBLE MARKET REACTIONS

TORONTO, ONT.—Although the new winter wheat crop of Ontario is still some months away, there is already much speculation in the trade as to whether the price will be maintained at the ceiling level when the new grain is on the market.

As pointed out by the Ontario Flour Millers Association recently, this depends on the law of supply and demand. If the crop is a large one and more than sufficient for requirements, prices are liable to decline. There is nothing in the ceiling regulations to prevent values going lower. On the other hand if something should happen to damage the crop and reduce the output to small proportions, prices could not advance beyond those now in effect, namely, $1.12 bu, Ontario points, or $1.26, Montreal basis.

This ceiling price basis was established last fall in a season when the crop was a short one and the grain has sold at the top price almost continuously since the beginning of the crop year. Normally western spring wheat is at a premium over winters but this season is an exception with winters selling at about 35c bu more than springs. If a good crop of Ontario winter wheat is harvested this year it is quite probable a reduction in price will follow. At present winter wheat millers are concerned as to whether there is enough old-crop remaining to carry them through until the new grain is on the market.

——BREAD IS THE STAFF OF LIFE——

FLOUR IMPORTS REGULATED AT TRINIDAD, SAYS REPORT

TORONTO, ONT.—The government trade commissioner at Port of Spain reports that new regulations affecting the flour trade of Trinidad have been put into effect in that market. No further licenses are being granted to individual importers for purchases of flour.

The food controller issued an order on April 10 taking over from a date to be fixed all outstanding unshipped orders and he will be responsible for all future purchases. He hopes to purchase flour, unlabelled except for grade marks, through the local agents of Canadian mills.

The food controller's purchases and stocks may comprise first and second-grade baking flour, according to market value, and extras when prices are economical. Supplies of flour will be delivered to merchants on the basis of their monthly requirements against payment of cash to the food controller. Prices will be net at the point at which delivery is made. Deliveries will be made in accordance with stocks on hand.

——BREAD IS THE STAFF OF LIFE——

DOMINION ESTIMATE PREDICTS 3% DECREASE IN '42 WHEAT ACREAGE

WINNIPEG, MAN.—The Dominion Bureau of Statistics has released its estimate of indicated acreages for 1942, based on farmers' intentions to plant. A 3% decrease was forecast in wheat acreage and a 12% reduction in the area for summer fallow.

The barley increase was placed at 36% over 1941, and the increase to oats at 10%. An increase of 54% in the acreage to flaxseed is indicated. The acreage to barley and flax will be the largest on record. The comparative figures for 1941 were the preliminary census figures.

Intended Canadian acreages were reported by the bureau as follows:

	1942	1941
Spring wheat	20,566,900	21,301,500
Oats	13,501,000	12,311,000
Barley	7,209,000	5,304,400
Spring rye	249,600	237,200
Flaxseed	1,531,600	994,500
Mixed grains	1,519,800	1,484,000
Summer fallow	17,349,000	19,738,000

Corresponding figures for the prairie provinces are as follows:

MANITOBA		
Spring wheat	2,149,000	2,442,000
Oats	1,426,000	1,308,000
Barley	1,990,000	1,531,000
Spring rye	28,700	27,300
Flaxseed	230,000	170,000
Summer fallow	1,740,000	2,000,000
SASKATCHEWAN		
Spring wheat	11,973,000	12,217,000
Oats	4,635,000	4,030,000
Barley	2,492,000	1,661,000
Spring rye	151,000	141,000
Flaxseed	1,090,000	681,000
Summer fallow	10,028,000	11,396,000
ALBERTA		
Spring wheat	6,287,000	6,481,000
Oats	3,219,000	2,799,000
Barley	2,160,000	1,543,000
Spring rye	56,800	55,100
Flaxseed	197,000	131,000
Summer fallow	5,581,000	6,342,000

——BREAD IS THE STAFF OF LIFE——

EGYPT REVISES FLOUR LAW

TORONTO, ONT.—The Department of Trade and Commerce, Ottawa, reports in a recent copy of its weekly publication that food control authorities in Egypt have issued new flour mixing regulations. Bakers are forbidden to produce bread from any other than a mixture of 50% flour (extracted from pure wheat in the proportion of 90%), 25% of corn flour and 25% of rice flour. Millers are also forbidden to manufacture any other flour than the mixture provided for.

MILLFEED SALES IN CANADA SLOW DOWN

Record Domestic Demand Prevailed During Past Winter—Export Permits Worth $12 Ton

TORONTO, ONT.—Sales of millfeed in Canadian markets are beginning to slow down a little following an exceedingly active period. Seldom if ever has there been such a demand in the domestic market as has prevailed during the past winter. The increase in production of dairy products, poultry, hogs and other livestock stimulated the demand for millfeed, but the fact that it was better value than any other form of feed was also an important factor in the heavy sales.

Through good work on the part of their association, millers of Ontario winter wheat flour are fortunate this year as they are allowed to export 50% of their production of millfeed. Many such millers sell all their output in the domestic market and do not find it necessary to do any exporting themselves. Consequently, they are in a position to sell their export permits. At the present time these permits are worth $12 ton.

Under an agreement with officials fractional permits may be procured from Ottawa and sold to exporters who have surplus millfeed but cannot themselves obtain export permits. These permits can be collected by an exporter until he has sufficient for an export shipment, which is 25 tons.

Export permits for spring wheat millfeed are issued only on quantities produced from flour exported to nonsterling countries which would be small and in this way millers who have surplus spring wheat millfeed may export it on these winter wheat millfeed permits. There is no objection to their doing so. Consequently, Ontario winter wheat flour mills are making nice profits on transactions of this kind at a minimum of trouble to themselves.

——BREAD IS THE STAFF OF LIFE——

TO OTTAWA POST

WINNIPEG, MAN.—Gurney Evans, son of W. Sanford Evans, and associated with the Sanford Evans Statistical Service for many years, left Winnipeg last week to accept an appointment in the department of ordnance at Ottawa.

BOX CAR RETURNS FOR ANOTHER LOAD

WINNIPEG, MAN.—The Canadian National Railways has reported that box car No. 509905 loaded wheat at the pool elevator at Estlin, Sask., April 5 for delivery to a lakehead terminal. Nineteen days later the same car turned up at the same town and same elevator for another load of wheat for the lakehead.

• SERVES AGAIN •

Ralph Woodcock, formerly employed at the St. Boniface mill of Western Canada Flour Mills Co., Ltd., enlisted in June, 1940, in the unit in which he had served prior to the outbreak of the war, the Royal Canadian Army Service Corps.

European

CONDUCTED BY C. F. G. RAIKES
Manager European Branch
52 Mark Lane London, E. C. 3, England
Telegraph and Cable Address,
"Northwestern Miller, Mark Lane, London"

Minister Quizzed on Cost of Fortified Flour Cancellation

LONDON, ENG.—With the banning of white flour and bread by the government many are asking the question as to what is being done in respect to the contracts for the supply and manufacture of the synthetic product, vitamin B_1. It is a matter of amazement that the government should so lightly discard its previous policy in view of all the work and expense that it had involved.

The ostensible reason for the action, of course, is an effort to save shipping space, which has been officially stated to be 600,000 tons of wheat and flour per year. The opinion is expressed, however, that this saving may be offset by imports of dairy products and feedingstuffs made necessary by the home produced millfeed being incorporated in the bread flour.

The question was brought forward in Parliament a few days ago but no official answer was forthcoming. The questioner was no other than Sir Ernest Graham-Little, the leader of the minority which, it is believed, is in large measure responsible for the change of front of the Minister of Food respecting his bread policy. Sir Ernest is not satisfied even now, for he is pressing for the institution of a 100% extraction loaf.

It was certainly ironical—intentional or unintentional—that he should question Major Lloyd George, the parliamentary secretary to the Minister of Food, in respect to the blow which has been struck at the synthetic vitamin B_1 plans through prohibition of the white loaf. He asked whether the minister would give an estimate of the expenditure incurred up to date in promoting the fortified white loaf, announced in July, 1940, including the cost of provision of factories in this country for the manufacture of vitamin B_1 and of the supply furnished in Canada and the United States. also, in respect to the payment of the royalties on the patents for production of this artificial vitamin and for bleaching the flour respectively, and the sums payable by way of compensation to the firms in this country and in Canada, whose contracts would cease with the cessation of the milling of white flour. All Major Lloyd George said in reply was:

"I regret that I am not able to supply the estimate asked for by my honorable friend."

Taking a long view of the situation, the taxpayer, who actually provided the money for the experiment, is now required to chew bran in his bread in order to absorb vitamin B_1 into his system, instead of by means of the much pleasanter scientific method for which he has paid steeply. He certainly does not do this bran chewing with relish, while it is a bitter disappointment to the scientists that the result of their tireless investigations and work has been allowed so short an innings. Just previous to the inhibition of white bread, 50% of the total consumption was fortified with vitamin B_1. London and the eastern section of England had not yet come under the scheme.

——BREAD IS THE STAFF OF LIFE——

FRENCH BAKING TROUBLES

LONDON, ENG.—Letters received from France, says a correspondent of *Confectionery and Baking Craft*, London, state that bakers in France are no longer able to obtain dates, figs, olives and chestnuts for their cakes, as they did last year, but are using all kinds of substitutes, which often cause deaths. A case is given of a young man who ate an almond cake made with raisin sugar and substitute almonds taken from the inside of peach stones. The raisin sugar ferments easily and it appears that its contact with the peach stone almonds liberated the small quantity of prussic acid which they contain and made it active, thus setting up food poisoning from which the young man died. Others who bought these cakes also suffered from food poisoning.

It also is stated that bakers in France have to practice great economy in the use of electricity and must close their shops at nightfall to save power.

The French Academy of Medicine reports that the children of France are losing weight because of food restrictions. Adults also are suffering from the same cause, and it is reported to be affecting their physical and mental work. Tuberculosis is making dangerous headway.

——BREAD IS THE STAFF OF LIFE——

FIELD WORK HASTENED AFTER SEVERE WINTER

LONDON, ENG.—The United Kingdom and most countries of Europe have experienced one of the severest and most persistently cold winters within living memory. The worst features in the United Kingdom were that the soil froze without snow protection to autumn sown grain and that for about eight weeks plowing was suspended. This resulted in a delayed start with spring cultivation and seeding and in some winter killing of the autumn sowings, though wheat has suffered to only a small extent.

As soon as frost disappeared excellent progress was made with field work. This was greatly helped by Great Britain's possessing 100,000 tractors, and these, together with well rested horses and recent fine weather, made up for lost time during the abnormal conditions of January and February, which throughout were in the grip of winter. A fair rainfall in March put the soil in good condition, but during the first half of April rainfall was comparatively small.

During the period of enforced inactivity in cultivation, threshing proceeded at a rate hitherto unknown in this country, in response to the government's appeal. The maximum price of wheat was reduced on May 1 by about 8½c bu, and growers with this prospect in view went all out to get their stacks disposed of before the lower price came into force. Country millers took into their silos every bushel for which room could be made, but a good deal went to the port mills, where it was ground with imported wheat, thus producing a weaker bread flour than is customary.

Biscuit manufacturers, who formerly were chief users of all-English wheat flour, may not relish the change over to an 85% extraction flour, but wheatmeal biscuits are not a new feature, even in pre-war days, while for many months past they have been freely manufactured for the fighting forces.

During a recent speech in the House of Commons, the Minister of Agriculture said, with emphasis, that the harvests of 1942 might well be a critical factor, not only in the history of Great Britain, but in the history of the world. The results of the agricultural drive were so far encouraging but he was neither satisfied nor complacent.

——BREAD IS THE STAFF OF LIFE——

SELF-SERVICE BUFFETS

LONDON, ENG.—Self-service buffets have become quite the order of the day in London and other large cities throughout the country owing to difficulties in securing staff since the compulsory enrollment of women and girls in the national services connected with the Army, Navy, Air Force and Land. The practice was beginning to grow before the war with the establishment of numerous cafeterias and milk bars. Impetus was given to the scheme with the starting up of British Restaurants and other communal feeding centers in bombed areas, which are all of the self-help description, but at the tea-shops, which are legion throughout London and other large cities, waitresses continued to be employed to serve the customers until a few months ago, when the compulsory national service for women came into force. Now all fit women between the ages of 20 and 31 must join one of the national services or do munition work, with certain exemptions where their services are required for the manufacture or distribution of food products, pharmacy, nursing, civil defense, civil service school teachers and care of home and children.

——BREAD IS THE STAFF OF LIFE——

BISCUIT MAKERS' PROFITS GOOD IN SPITE OF CONTROL

LONDON, ENG.—In spite of controlled and reduced output of biscuits during the last year the leading biscuit manufacturers have made some good profits. Peek, Frean & Co., Ltd., London, announces a net profit of $267,790 for 1941, after payment of taxes, etc., compared with $338,960 in 1940, but gross profits exceeded those of 1940 by $331,550, amounting to $1,082,310 after provision for contingencies. If compared with net profits it will be seen how large a sum was absorbed in taxes. The dividend paid was 4% as against 6% the previous year.

Another large biscuit company, Huntley & Palmers, Ltd., Reading, announces a net profit of $650,350 and the payment of a dividend of 1½% for the year 1941, as compared with 2½% in 1940.

Gray, Dunn & Co., biscuit and cake manufacturers, of Glasgow, announce a net profit of $41,300 and the payment of 7½% on preferred common shares.

Still another milling and baking concern which has done well during the year ending Dec. 31, 1941, is Johnson, Mooney & O'Brien, Dublin. The net profit was $58,300 on which were paid a dividend of 6% and a bonus of 1%.

It is understood a further reduction in the output of biscuits has been decreed by the Ministry of Food and that manufacturers will be required to use the same proportion of 85% extraction national wheatmeal and white flour as applies to bread. Only a limited quantity of biscuits is available for the public. Purchases, as a rule, are confined to half a pound per person at a time, so that all can share alike. Even then there are often occasions when no supplies are available in the shops. However, large quantities of biscuits are supplied to the Navy and fighting forces abroad and to the canteens in home camps, which have kept the manufacturers very busy.

The quality of all makes of biscuits has been well maintained so far, in spite of the rationing of fats and sugar, but a large proportion of the biscuits on sale are of the unsweetened description. What they will be like under the new flour order has yet to be proved.

OVERSEAS

Fred Whitewell, now serving overseas, is attached to the Third Division Ammunition Supply Co. He was employed at the St. Boniface mill of Western Canada Flour Mills Co., Ltd., before his enlistment early in 1940.

CANNON VALLEY

is manufacturing one of the outstanding flours made in Minnesota. A perfect flour, laboratory controlled. Many of our old customers and some of our new connections have written us voluntarily that they have never had so many favorable comments. We can please the most exacting.

CANNON VALLEY MILLING CO.
Chamber of Commerce
Minneapolis

Leading Patents
VANITY FAIR
TELEPHONE
MARITIME
} Laboratory Controlled

"Sweet Cream"
"Very Best"
Quality Flours
W. J. JENNISON CO.
MINNEAPOLIS, MINN.

THE
Shellabarger Mills
Millers Since 1776
SALINA ◆ KANSAS

"DIAMOND D"
A High Grade Baker's Spring Patent
Milled Under Laboratory Control
from Montana Spring Wheat
Sheridan Flouring Mills, Inc.
SHERIDAN, WYOMING

DIXIE LILY
A flour without an equal anywhere
Plain and Selfrising
THE BUHLER MILL & ELEVATOR CO.
BUHLER, KANSAS

The Williams Bros. Co.
Merchant Millers KENT, OHIO, U. S. A.
Specialists Ohio Winter Wheat Flour
All our wheat is grown on "Western Reserve" and bought from the growers at elevators we own and operate.

Lyon & Greenleaf Co.
MILLERS OF
High Grade Soft Winter Wheat Flour
LIGONIER, IND.
WAUSEON, OHIO NORFOLK, VA.

This or Silence

(Continued from page 18.)

and time were used in an effort to induce people to use *less* gasoline. If that is "selling," it will be very difficult to measure the results in the sales figures at the end of the year.

The truth is, the term "selling" has come to be used very loosely . . . especially with reference to advertising. Advertising cannot make change, wrap up packages, or perform any of the many services or functions of the retailer. Most of the time, it does not even operate in the presence of an opportunity to buy.

What advertising actually does is to convey a message . . . *to say something which Management wants to say to a large number of people.*

Which leads us immediately to a definition and concept of advertising which has far-reaching implications:

Advertising is a specialized technique for mass communication. It exists for two reasons . . . because it is fast, and because it costs less than any other method.

These are not the only characteristics of advertising, but they are the most essential ones. Without them there would be no advertising at all. These two characteristics explain why Management uses advertising. It uses it for the same reason that it uses accounting—it is the most efficient way to accomplish a desired end.

The Responsibility of Management

In the light of this definition it becomes apparent that *advertising is nothing in the world but a tool of Management.* This is an exceedingly sharp and powerful tool; and it can be misused, just as accounting can be misused, or the franking privilege. But it cannot be dispensed with. And it cannot be dispensed with because there is no substitute.

Because it has occasionally been misused, the tool of advertising has been attacked. But this is manifestly absurd. It would be just as sensible to criticize a hammer because somebody had used it to commit a murder.

Because advertising is a difficult tool to handle, Management usually enlists the aid of organizations . . . advertising agencies . . . which are specially trained and skilful in its use. *But the tool does not belong to the agency; it belongs to the advertiser who pays for it.*

The final responsibility for advertising rests with the advertiser. As a basic technique, it is as much a part of his operating equipment as manufacturing or accounting. Yet it is a curious fact that many business men of the highest type, who would not think of turning out a shoddy product or falsifying their books or retaining a shyster lawyer or going to a quack physician, will nevertheless use advertising methods which are both irresponsible and ridiculous.

The whole standing and reputation of a company may be fundamentally affected by the advertising through which the company tells its story to the public. It is as important to safeguard the integrity of that advertising as it is to be represented in court by reputable counsel, or to keep company funds in a sound bank.

Nor can the importance of telling the story be too strongly emphasized. Any business Management which has nothing to say to the public at a time like this is either blind or inexcusably timid.

To tell its story consistently and well, to keep itself always in the forefront of public knowledge and confidence . . . that is one of the first duties of Management. No company can afford the luxury of silence. And it is not only a duty, but a right. Under our law and theory of government, the right of every citizen to free speech, to say his say, to have his day in court, is basic and inalienable. It is one of the four freedoms cited recently by the President of the United States. And like all freedoms, if it is not to be lost, it must be valued and fully exercised and defended.

Thus it becomes clear that advertising is not a magic sales lamp, nor a species of sorcery, nor (as some of its critics would have us believe) a sinister device for the enrichment of entrenched privilege. It is simply a tool . . . a technique for mass communication . . . and one which is among the most useful and important of all the tools which Management has at its disposal.

Now, the usefulness of this tool of Management is not fully appreciated until it is remembered that *Management is not confined to Business.*

Management means any responsible group or individual vested with authority to direct an operation or enterprise of any sort.

New Horizons and Opportunities

Government is Management. Organized Charity is Management. Education is Management. Public Health is Management. The Nutrition Movement is Management. Every league, grange, society, federation or association in the land is Management. And most of them have something which they believe in and very much want to say.

Some of these other forms of Management already are using advertising in an experimental but successful way. The U. S. Government, for example, is using advertising to recruit likely young men for our armed services, and to obtain technicians of various kinds. In Philadelphia the federated charities went to the public last year with a carefully planned program of advertising to tell their story of human suffering and service. Many other instances could be cited.

But this is only a beginning. Advertising can be used in many ways yet untried and undreamed of . . . to stabilize markets . . . to control inflation . . . to promote healthy competition . . to thrash out controversies . . . to crystallize public sentiment in matters of public policy . . . to strengthen our minds and hearts as one people working toward a common goal.

Here in America our whole existence is built around the Democratic process. That is what we are fighting for. We feel, and will always feel, that Freedom is the greatest thing in life. And of all freedoms, freedom of speech is the most precious. If we doubt it, we need only look about us in the world. It is a significant fact that wherever the darkness of despotism lies over the earth, there is no voice but the voice of the dictator.

As fine a flour as you will find milled from the finest Turkey wheat in the heart of Kansas in

An Independent Mill

WOLF MILLING CO.
ELLINWOOD, KANSAS

A New Brand on the Milling Horizon
BIRCHMONT
Typically Minnesota—a short patent that will stand comparison
— and —
WHITE GOLD
(Standard Patent)
ST. CLOUD MILLING CO.
ST. CLOUD, MINNESOTA
300 Bbls Capacity

BLAIR'S Certified FLOUR FEEDS
BLAIR MILLING CO., Atchison, Kans.

"RUSSELL'S BEST"
"AMERICAN SPECIAL"
Our mill is located in the high protein wheat district of central western Kansas, and secures most of its wheat directly from growers.
RUSSELL MILLING CO., Russell, Kansas

GOLD KEY
A standard patent flour of high loaf volume, producing excellent flavor and texture—fairly priced.
WISCONSIN MILLING CO.
MENOMONIE, WIS.

THE ROSS MILLING CO.
Choice Quality Flour
Plain and Selfrising
OTTAWA KANSAS

"Whitewater Flour"
Ground Where the Best Wheat Is Grown
WHITEWATER FLOUR MILLS CO.
Whitewater, Kansas

KING MIDAS FLOUR
KING MIDAS FLOUR MILLS
Minneapolis, U. S. A.

At About This Time of Year

In a Democracy, the supreme tragedy is silence.

Yet the voice of Democracy is not always a clear voice. Often it falters, stutters, digresses. Sometimes it even forgets what it is talking about, there is so much to say. Particularly in an emergency, this can be dangerous.

Here, especially, advertising can serve. As a technique of mass communication, advertising can sharpen and shape ideas, present them clearly and fairly in the public forum, bring them infinitely more swiftly to the point of action. *Advertising, more than any other tool, can be used to speed up and make more effective the Democratic process.*

Advertising, if properly defined and understood, has before it a magnificent opportunity. By those whose task it is to build a better world, it will be used in constantly increasing measure. Advertising can be used to help in making our nation secure in time of war. It will be of even greater use in cultivating and making available to every one the fruits of peace. And it may be that some day our country may call upon it to carry to other, less-favored nations our vision of universal brotherhood and abundance, of human freedom and co-operation and good-will.

——BREAD IS THE STAFF OF LIFE——

NEW CANADIAN WHEAT PRICE APPLIES TO '42 CROP ONLY

WINNIPEG, MAN.—The new price of 90c bu for western wheat, basis in store at Fort William and Port Arthur or Vancouver, effective Aug. 1, this year, applies only to wheat produced in 1942, according to Canadian Wheat Board instructions to the trade.

In drawing the attention of producers to this fact, the board states that after July 31, 1942, all wheat will be marketed under quotas and these quotas will apply only to wheat produced in 1942. Farmers having stocks of old crop wheat on their farms may not hold it over for marketing after July 31 at the new price level, the statement says.

"SUPERFLOUR"
"BUFFALO"
Tops in Bakery Flours
★ ★
THE WILLIS NORTON CO.
Quality Millers Since 1879
Capacity 1,500 Bbls. WICHITA, KANSAS

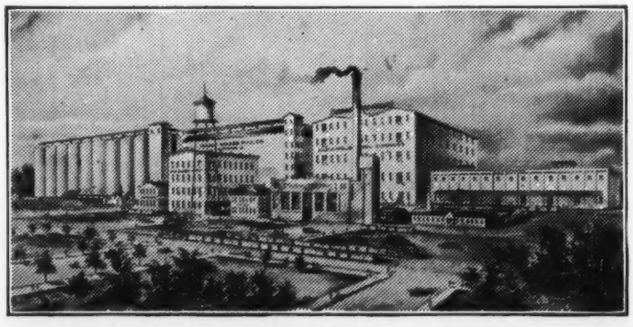
KING'S FLOURS
are Made in Minnesota ... and Nowhere Else
●
MINNESOTA ... the state that has made MORE FLOUR than any other state in the Union.
MINNESOTA ... the state that makes the BEST FLOUR in the world.
Buy flour that is guaranteed "Made in Minnesota"
H. H. KING FLOUR MILLS COMPANY
MINNEAPOLIS, MINNESOTA

RED WING FLOUR
Milled in Minnesota for Over 40 Years
THE RED WING MILLING CO., Red Wing, Minn.

"Cremo" Just the cream of hard wheat. Crookston Milling Company CROOKSTON, MINN.

MINNESOTA GIRL FLOUR ..... long on quality!
Spring Wheat Fancy Patent Family Flour
Enriched { with Vitamins and Iron
CAPITAL FLOUR MILLS, Inc.
General Offices: Minneapolis Mills: St. Paul

SPRING WHEAT FLOURS of HIGHEST QUALITY....
All of our leading wheat patent flours are now optionally available enriched with Vitamin B_1, Niacin and Iron to the levels recommended by the National Research Council.
For bakers who prefer to do their own enriching we can supply
EAGLE ENRICHED CONCENTRATE



EAGLE ROLLER MILL CO. *Daily Capacity, 5,000 Barrels* New Ulm, Minn.

Stuffed Straights

FROM THE MANAGING EDITOR'S SIFTER

By Carroll K. Michener

WHEN RICHMOND WAS THE MILL CITY.—We have a hard time explaining to some of our readers how it happened that Richmond, Va., should once have been the leading flour milling city of America. The period of its supremacy lies in post-revolutionary years, lasting until the building of the Erie Canal and the development of wheat cultivation in the West of that era, which put Rochester, N. Y., in the lead. Still farther westward marched the wheat fields, taking the crown in two or three more decades to St. Louis, and finally, a little over 50 years ago to Minneapolis. Now, completing a cycle, flour milling leadership on this continent has returned to New York state, and resides in Buffalo.

One of the protestants who accosts us on the subject says he learned in his history book that Virginia was a tobacco state. So did we, and teacher never told us about the great changeover to wheat (owing to declining tobacco prices and profits) that began around 1750 and continued on down through that century and even later. Fact is, a lot of folks don't recognize the magnitude even of today's wheat and flour production in the Old Dominion. Virginia's wheat fields produce nearly 9,000,000 bus per year (Maryland about the same) and her mills about 1,500,000 bbls of flour.

Milling began earlier in the northern colonies than in the South. Owing to times and circumstances, moreover, it took a different trend. While custom grinding persisted in the North, rendering the industry scattered and local, merchant milling to supply a large and growing export trade developed in Maryland and Virginia. Said Thomas Jefferson in 1786:

"There is no neighborhood in any part of the United States without a water gristmill for grinding the corn of the neighborhood."

And Charles B. Kuhlmann, author of "The Development of the Flour Milling Industry in the United States," adds:

"Poor facilities and the high cost of transportation tended to make each locality self-sufficient, and therefore most of the mills were small custom mills catering only to a local trade. Except when located on the sea coast, the miller could not sell a large output; unless located on a navigable river flowing through a fertile valley, it was difficult to secure an adequate wheat supply."

The ideal location for a mill in those days, says Kuhlmann, was one at the head of navigation on a moderately large stream running through a good wheat raising area. There, the wheat coming downstream from the farms along the banks, would have to be transferred to wagons or boats, making the place a desirable one for wheat buyers to assemble. The falls of the stream would furnish a desirable water-power and the ships which carried the flour to market could load directly from the packing floor of the mill.

The scattering of the mills reflects the fact that wheat growing was also widespread throughout the colonial period. In the pioneer stage, almost every one grew some wheat in order to attain self-sufficiency. After this stage was passed and farming for the market attained, wheat became the staple crop in those regions best adapted to wheat growing. The first wheat belt, developed at the end of the colonial period, may be roughly defined as including, at the north, the Hudson Valley and the eastern end of the Mohawk, with an extension into eastern Vermont and western Connecticut; in New Jersey a belt of land extending from New York City to Philadelphia; in Pennsylvania the southeastern quarter of the state; the northern part of Delaware; and the Piedmont region of Maryland, Virginia, and northern North Carolina. In Virginia and Maryland it included also a part of the Tidewater region. In general this was a region which compared favorably in soil and climate with the best wheat growing areas in other parts of the world. It was peculiarly favored with natural facilities of transportation.

Maryland and Virginia had water power, water transport and access to the sea. From their ports, principally Baltimore and Richmond, these colonies shipped large quantities of flour to their sister colonies. But it was the export trade to the West Indies and South America that gave them their richest harvest. During the Revolutionary War flour costing four Spanish dollars per barrel in Baltimore sold for $36 per barrel in Havana. Brazil was thrown open to American trade after the removal of the Portuguese royal family to Rio de Janeiro in 1810, and here began one of the bright pages in American flour export history, dog-eared in 1931 when the United States government undertook its notorious wheat-coffee swap. Baltimore's exports of flour to Brazil, in the period of the Civil War, had reached five times their present volume, and Richmond, too, shared generously in this trade. By 1825 the South American trade of Baltimore and Richmond had extended even so far as Chile and Peru.

During all these years Baltimore overtopped Richmond in volume of flour traded, but Richmond appears to have been the largest producing center. In 1819-1823, for example, 473,340 bbls of flour were inspected at Baltimore, against 126,120 in Richmond, and in 1849-53, 1,012,766 against 353,264. The explanation seems to be that Baltimore enjoyed greater shipping facilities, thus attracting flour for export manufactured over a wide area, much of it even made in Richmond, which never seemed able to draw to its wharves the trade of the minor manufacturing centers of Virginia. Even such small and weak commercial centers as Georgetown, Alexandria and Norfolk seem to have been able to develop an export trade of their own independent of Richmond.

Flour milling in Richmond, states Kuhlmann, reached its height in the decade before the Civil War. At that time the city's mills were producing nearly 400,000 bbls of flour annually, while Baltimore was producing perhaps 500,000. But the greatest flour manufacturing center then had become St. Louis, producing nearly twice as much.

The Haxall-Crenshaw Mills in Richmond's Milling Heyday

. . . That colossal trade journal of a colossal industry, *Super Market Merchandising*, gives enriched bread a break. Its readers are urged to push it, and they are given the reasons why and arguments to use at the point of sale. . . . We liked this paragraph: "Any advertising of the special vitamin breads should be truthful, moderate, reasonable and constructive in tone. It should never be so negative as to cast any reflection on other types of bread. The best way to advertise this product is to state that it contains in easily digestible and appetizing forms the same valuable nutrients that are found in whole wheat, provided, of course, that it actually does so. It is not desirable to make any exuberant claims for the alleged effects of the vitamins or minerals themselves." . . . and this one: "Many of the Vitamin B_1 breads now on the market have been advertised in a somewhat objectionable manner. Not only have extravagant and unscientific claims been made for these breads, but in many instances statements derogatory to ordinary white bread have been included in this unwise advertising."

. . . Donald Johnston, of Regina, Sask., makes rain but he is not a rainmaker—that he insists upon, for he detests the word. He admits, however, that he made all the rain there was in Saskatchewan last year. He did it with his mysterious machine—"an instrument of his invention." It's influence is "gravitationally-magnetic," and governed by the moon's position in the sky. Not only, when the moon is right, will the implement bring down rains and snows, but it will also make plants fairly jump out of the ground. . . . Mr. Johnston writes us as follows: "If you are ever up this way again I hope I might have the pleasure of showing you this instrument. Or if there is any land in the U.S.A. that should have its rainfall reputation changed—I can do it!"

. . . Is the average housewife conscious of vitamins? The question is important in view of the general feeling of the breadstuffs industries that the public hasn't properly taken hold of the enriched bread program. But here is Arthur C. Nielsen, the Nielsen Food Index man, with his report of a special consumer survey in the central states, where it was found that the average housewife is conscious of vitamins, and "that over half of them look to foods as an adequate source of their families' vitamin requirements." . . . This condition constitutes a diamond mine for food manufacturers, Mr. Nielsen thinks. He says nothing specific about enriched flour and bread in this connection, but obviously they cannot be very far from the mine.

UNITED WAR EFFORTS STUDIED BY KANSANS

Grain, Feed and Seed Dealers Hear Responsibility for Co-operative Program Stressed

DODGE CITY, KANSAS.—The 300 delegates registered at the Kansas Grain, Feed and Seed Dealers Association convention May 11-12 gave interested attention to the program theme, "All out to win the war." The responsibility to utilize every experience and ability available to make united efforts effective was stressed.

Milton P. Fuller, of the Thomas Page Milling Co., called attention to the great saving effected by the War Department when they enlisted the aid of a friendly miller in making their flour purchases.

"Formerly," said Mr. Fuller, "when the department asked for bids on flour they submitted a half pound of forms on which the complicated bids on the basis of price per pound to the one thousandth part of a cent were submitted. Stepping into this chaos of confusion, an experienced business man reduced the form to a single sheet. The offering is made in a 10-word telegram and accepted by four words. Similarly, the same business man arranged so flour could be delivered from near-by mills to the armed camps without unnecessarily long railway hauls.

The saving is typical of what might be accomplished by experienced business methods, he pointed out.

Jess B. Smith, manager of the Associated Millers of Kansas Wheat, pointed out the responsibility of the Kansas wheat grower to continue to produce the best wheat possible. He emphasized the huge demand on Kansas for flour acceptable to the bakers and urged co-operation of dealers and farmers in carrying out the program of the Kansas Wheat Improvement Association.

"The army," he said, "is specifying 13½% protein wheat, which looks as though it is a natural for Kansas, fitting into our type of production."

Ralph M. Field, president of the American Feed Manufacturers Association, held the attention of the dealers as he explained the problems of getting orders so that the feed industry can survive and still serve the vital needs of agriculture. Since the industry does sit in the front row with agriculture, it is not yet having as much trouble as some other interests. He said that it is up to the grain industry, by self regulation, to keep clear of further federal controls.

Mr. Field pointed out that if a dozen aggrieved farmers write Washington an emergency is created. He strongly urged that, since the farmers are, themselves, vitally interested in these problems, they should be made acquainted with the difficulties that may interfere with their production and they should be enlisted to present these matters to Washington to get proper attention.

The recent trucking order to require full outbound loads and 75% inbound loads was defined by the speaker as imposing conditions impossible to fulfill, and the proposed new full capacity carload order, he said, is also full of dangers. Mr. Field observed that the feed section is understanding and sympathetic and that there is a strong effort to modify and adjust orders.

Floyd D. Strong, director of the Motor Carrier Division of the Kansas Corp. Commission, brought a fresh report of the recent presidential conference at Washington of several states. Jesse Jones, Secretary Wickard, Donald Nelson and Joseph Eastman all were in attendance and begged the states to co-operate and to carry the message of asked-for co-operation to the people of the states. The rubber shortage is the heart of all the trouble, and every effort must be made to conserve the supply of this product.

Mr. Strong remarked that when John D. Rogers, national director of Motor Carriers Section of ODT, whose son had just been killed in action in the Atlantic, asked for co-operation, it was pretty hard to refuse the request. Administrator Leon Henderson wasn't so polite in his requests. In setting up state panels to administrate the orders, Mr. Henderson said, "If there are any political shenanigans going on in any state, if the Hatch Act doesn't get them, Henderson's axe will."

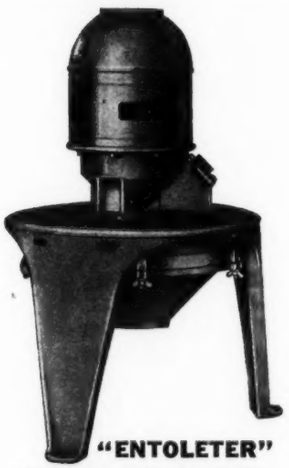
Dan Sullivan, of Ulysses, was re-elected for another term as president, and J. F. Moyer was re-elected secretary.

RUSSELL-MILLER LEASES ELEVATOR AT ST. JOSEPH

The Russell-Miller Milling Co., of Minneapolis, has leased the 1,000,000-bu Burlington elevator at St. Joseph, Mo., and has engaged Wallace Neil, of the Davis-Noland-Merrill Grain Co., of Kansas City, to manage it. The elevator will be used as a winter wheat supply base for the mill at Alton, Ill., operated by the Stanard-Tilton division of the company. The company also operates an elevator at Topeka, Kansas.

Preserve food for

VICTORY!



"ENTOLETER"
shown above handles 50 barrels per hour.
"ENTOLETERS" also available to handle 10, 25 or 75 barrels per hour.

FOOD IS FIGHTING THIS WAR TOO!

●

Food Spoiled by **INSECTS** *is ammunition* **WASTED**

If you make products or use raw materials which are subject to

INSECT INFESTATION

such as

Flour, Flour Compounds, Corn Meal, Farina, Cereals or similar free flowing Dry Materials—including DEHYDRATED PRODUCTS . . . the

ENTOLETER
INFESTATION DESTROYER
REG. U. S. PAT. OFF.

will positively destroy 100% of any insect eggs

or other forms of insect infestation which may be waiting to ruin both your product and your reputation.

Actual plant operating records and certified Laboratory tests offer conclusive evidence that the "ENTOLETER" method of total destruction is 100% efficient.

Prompt deliveries can be made NOW . . . write us about your problem

ENTOLETER DIVISION
THE SAFETY CAR HEATING AND LIGHTING COMPANY, Inc.
230 Park Avenue -:- New York, N. Y.

ARNOLD
...of...
STERLING
Mills and Sells
"Thoro-Bread"
(Diastatically Balanced)
A very fine, strong, altogether uniform and dependable flour
ARNOLD MILLING CO.
STERLING, KANSAS

Better flour for Baker, Jobber and Grocer....
"HAVASAK"
SECURITY FLOUR MILLS CO.
Operating SECURITY and MID-WEST Mills
W. A. CHAIN, Mgr. ABILENE, KANSAS

ALL TYPES OF FLOURS
To Meet Modern Baking Needs
FEDERAL MILL, Inc.
Lockport, N. Y.

Serving the Metropolitan Buyers for Over 40 Years With the
HIGHEST QUALITY FLOURS PRODUCED
NEW JERSEY FLOUR MILLS CO.
CLIFTON, N. J.
Renown for Our Prompt and Efficient Service
Only 11 Miles from New York City

F. & R.'s
GENUINE
GLUTEN FLOUR
Guaranteed to comply in all respects to standard requirements of the U. S. Department of Agriculture
Manufactured by
The Farwell & Rhines Co.
Watertown, N.Y., U.S.A.

FINGER LAKES AND HUDSON FLOUR MILLS, Inc.
Geneva, N. Y.
WHEAT FLOUR Mills At RYE FLOUR
GENEVA, N. Y. TROY, N. Y.

TOWN CRIER FLOUR
MIDLAND FLOUR MILLING CO.
2010 Taney Ave. No. Kansas City, Mo.

WAR TOPICS DOMINATE CONVENTION PROGRAM OF SOUTHERN BAKERS

Housewives Expected to Turn to Bakers for Desserts, Delegates Told—L. J. Schumaker Hits Price Ceiling Order —D. Lee Hilton Named President

ATLANTA, GA.—After having served as vice president for two years D. Lee Hilton, Charlotte (N. C.) Bread Co., was elected president of the Southern Bakers Association at its annual convention at the Biltmore Hotel, here, May 3-6. He succeeds Joseph Hexter, Columbia Baking Co., Atlanta, who automatically becomes chairman of the board of governors, and who will act as the Washington representative of the organization. The line up of officers was varied this year and two vice presidents were elected. They are Roy Jacobson, H. H. Claussen's Sons, Augusta, Ga., first vice president, and B. R. Fuller, Jr., Bell Bakeries, Inc., Daytona Beach, Fla., second vice president. C. M. McMillan, Atlanta, will continue to serve as secretary-treasurer.

Members of the board of governors follow: Alabama—George Ball, Ball's Bakery, Opelika, carry-over, and T. A. McGough, McGough Bakeries Corp., Birmingham, re-elected. Arkansas—Charles Meyers, Meyers' Bakery, Little Rock, elected, and Garvin Shipley, Shipley Baking Co., Fort Smith, carry-over. Florida—R. C. Graham, Federal Bakeries, Orlando, carry-over, and L. L. Chandler, Fuchs Baking Co., South Miami, elected. Georgia—Horace Small, Small & Estes Bakery, Gainesville, elected and E. J. Derst, Derst Baking Co., Savannah, re-elected. Kentucky—E. W. Cassidy, Cassidy Bros., Covington, elected, and William J. Rains, Grocers Baking Co., Lexington, carry-over. Louisiana—Carl Goldenberg, H. Weil Baking Co., New Orleans, carry-over, and Benny Shutten, Leidenheimer Baking Co., New Orleans, elected. Mississippi—Ben Pollman, Smith's Bakery, Meridian, carry-over, and George Rayl, Hardin's Bakery, Columbus, elected. North Carolina—Raymond Streb, Royal Baking Co., Raleigh, carry-over, and P. K. Wilde, Quality Bakery, Asheville, elected. South Carolina—R. H. Jennings, Jr., Peoples Baking Co., Orangeburg, elected, and Charles R. Roberts, American Bakeries Co., Atlanta, carry-over. Tennessee—Frank Grout, Colonial Baking Co., Memphis, carry-over, and Ferrell Smith, Cameron & Barr Baking Co., Chattanooga, elected. Virginia—Harry Lowery, Lee Baking Co., Harrisonburg, carry-over, and William A. Jones, Aunt Betty Bakeries, Inc., Danville, elected.

On the closing day of the convention, the bakers heard Malcolm Bryan, vice president, Federal Reserve Bank, Atlanta, speak on "The Changing Economy in the National Emergency." He pointed out that the tremendous costs of the war must be handled by the present generation of taxpayers on the "pay-as-you-go" plan.

A tax load as heavy as possible is the only means of paying the debt this nation will contract in winning this war, Mr. Bryan said. The next generation must be debt-free to handle the world it will inherit, he added.

On the opening day of the convention, L. J. Schumaker, president, American Bakers Association, brought up the sugar question, pointing out that the big difference in dessert offerings of the bakers in the future will be in appearance. Pies and cakes will probably taste just as sweet as they did in the past because the bakers will use honey, new syrups and other substitutes to make up for their 30% reduction in sugar due to rationing.

Some fancy effects will be produced in icing because of the shortage, he said. Those cakes that have icing will probably have it only on top, and only thinly there. It may be applied in lacelike patterns and many colors to make up in appearance what it lacks in substance—a sort of icing illusion that may tempt more than satisfy.

Icing for fillings will be replaced by jams and jellies and other fruit concoctions, he added, and it was felt by the bakers that housewives whose recipe books are outmoded by the new ration regulations will turn to the bakery for their desserts. It was believed that the half-pound-per-person sugar allotment to individuals would be used largely for cereals and beverages.

Mr. Schumaker said the bakers feel that customers generally will like the altered products, that the new dessert styles will remain after the war and that the day when half-inch icing was left on the plate has gone forever.

In speaking of price ceilings, Mr. Schumaker stated that something must be done by the bakers since there were no price ceilings on the chief ingredients used by them. However, he added that the baking industry was fortunate as compared to other industries because the baking business was still going on, although it could be stopped instead of having the opportunity of changing its way of doing business. He concluded with the advice that the bakers should not resent anything that's going on and that confusion should be expected and he predicted an automatic increase in bread business and suggested that the bakers give the consumer the type of bread that appeals to him.

Southern Allied Group Elects

ATLANTA, GA.—H. J. Slocum, Standard Brands, Inc., Birmingham, Ala., was elected new president of the Southern Bakers Allied Association at that organization's annual gathering held in conjunction with the meeting of the Southern Bakers Association at the Biltmore Hotel May 3-6. Mr. Slocum, vice president last year, succeeds Jack Lanum, Anheuser-Busch, Inc., Atlanta. T. Brooks Pearson, Manufacture Sales Co., Atlanta, was named vice president; and Frank Rowsey, editor of the *New South Baker*, Atlanta, will continue as secretary-treasurer.

—BREAD IS THE STAFF OF LIFE—

BISCUIT MANUFACTURERS TO MEET

CHICAGO, ILL.—The Independent Biscuit Manufacturers' Co. has announced that its annual convention will be held at the Drake Hotel here May 26-28. Harry D. Butler is secretary.

Use Fenkell's EXTRA FANCY CAKE FLOURS to Cut Down "STALES" and build UP SALES..
"Made Good" Since 1855
COMMERCIAL MILLING CO.
Detroit, Mich.

"OLD SQUIRE"
Always is good flour. Pays no attention to ups and downs and this and that.
Just always GOOD FLOUR
Moore-Lowry Flour Mills Co.
Board of Trade Bldg. Kansas City, Mo.

"Gooch's Best"
SUPERIOR QUALITY
to Make All Baked Things Better
Gooch Milling & Elevator Co.
Lincoln, Nebraska

"Hunter's CREAM"
A Kansas Turkey Wheat Flour
that for more than sixty years has stood at the very top of the fine quality list.
The Hunter Milling Co.
Wellington, Kansas

Two of the Nation's Finest Flours
"AMERICAN EAGLE"
"THE ADMIRAL"
The H. D. LEE FLOUR MILLS CO.
Salina, Kansas

Gallatin Valley Milling Co.
MONTANA
Flours and Grain
D. R. FISHER, Mgr. BELGRADE, MONT.

NATIONAL MILLING CO.
Empress
High Gluten Patent
Minneapolis, Minn.

An EXTRA HOUR OF DOUGH STABILITY WITH WISDOM DIA-GLUTIN FLOUR

A new development which greatly extends fermentation tolerance. Provides more time for "cutting over" or giving dough extra punches. If you want a flour which will stand abuse, write or wire

NEBRASKA CONSOLIDATED MILLS COMPANY
1321 N. 16th St. OMAHA, NEBRASKA

"DURAMBER"
SEMOLINA
FANCY No. 1
Milled from Carefully Selected
AMBER DURUM WHEAT
AMBER MILLING CO.
Chamber of Commerce - MINNEAPOLIS
Cable Address: "AMBERMILCO"

ROYAL FLUFF-EAT-A

It pays to pick the right cake flour! Average flours really cost more than top quality flours like ROYAL FLUFF-EAT-A, which produces more finished cake per pound of flour. You get a richer, moister, longer-keeping cake with ROYAL FLUFF-EAT-A.

VOIGT MILLING CO.
Grand Rapids, Mich. Telephone 85091

THE QUAKER LINE
Flour — Cornmeal
Commercial Feeds
THE QUAKER OATS CO.
St. Joseph, Mo.

King Milling Company
High Grade Michigan Soft Wheat Flour, Plain and Self-Rising
Successful Millers for Fifty Years
LOWELL, MICHIGAN

TRIPLE XXX FINE GROUND
ALFALFA MEAL
Ideal for Poultry Mashes
THE DENVER ALFALFA MILLING & PRODUCTS CO. Merchants Exchange, St. Louis, Mo.
Lamar, Colo.

PAGE'S FLOURS
THE THOMAS PAGE MILL CO.
Topeka, Kansas

NEW ULM ROLLER MILL CO.
Red Jacket Patent
Double Seven High Gluten
NEW ULM MINNESOTA

Western Canada Visible Grain Supply

Visible supply of grain in the western inspection division May 8, 1942, and receipts and shipments during the past week, in bushels (000's omitted):

	Wheat	Durum	Oats	Barley
Fort William and Port Arthur—				
Semi-public terminals	113,794	360	752	2,299
Private terminals	..	..	38	3
Totals	113,794	360	791	2,302
Vancouver-New Westminster	18,008	..	61	52
Int. public and semi-public elevators	17,203	..	28	71
Churchill	2,617	..	..	.
Victoria	1,023	..	..	..
Prince Rupert	1,206	..	..	..
Totals	153,851	360	881	2,425
Year ago	112,672	2,130	1,479	960
Receipts during week—				
Ft. Wm.-Pt. Ar.	6,138	10	74	48
Pacific seaboard	57	..	..	..
Int. public and semi-public elevators	..	..	5	1
Totals	6,195	10	79	49
Shipments during week—				
Ft. Wm.-Pt. Arthur—				
Lake	8,517	172	136	231
Rail	88	5	209	128
Int. public and semi-public elevators	78	..	1	7
Pacific seaboard	51	..	13	3
Totals	8,733	177	359	370

TOTAL RECEIPTS
Aug. 1, 1941-May 8, 1942

Ft. Wm.-Pt. Ar.	188,444	1,782	15,133	16,733
Pacific seaboard	2,165	..	272	115
Int. public and semi-public elevators	468	..	131	143

TOTAL SHIPMENTS
Aug. 1, 1941-May 8, 1942

Ft. Wm.-Pt. Ar.	156,335	2,073	17,014	15,498
Pacific seaboard	1,649	..	331	84
Int. public and semi-public elevators	3,218	1	176	68

Flour and Grain Receipts and Shipments

Receipts and shipments of flour and grain at the principal distributing centers for the week ending May 9, as compiled by the Daily Trade Bulletin†, flour given in barrels, grain in bushels (000's omitted throughout):

RECEIPTS

	Flour	Wheat	Corn	Oats	Rye
Chicago	226	87	2,769	509	2
Duluth	..	604	952	..	7
Indianapolis	..	21	460	112	..
Kansas City	..	851	537	90	..
Milwaukee	32	..	238	16	4
Minneapolis	..	1,257	517	259	164
Omaha	..	70	372	132	..
Peoria	55	90	1,040	30	15
Sioux City	..	62	48	6	2
St. Joseph	..	41	141	106	..
St. Louis	119	66	541	56	23
Wichita	..	180	..	..	..
Totals	432	3,329	7,615	1,316	217
Seaboard—					
Galveston	..	130	..	..	..
New York	89	839	3	..	..
Philadelphia	28	10	2	..	..
Totals	117	*979	5	..	..
Grand totals	549	4,308	7,620	1,316	217
Last week	474	4,022	7,599	1,361	219
Last year	546	6,203	5,018	870	773

*839,000 bus bonded.

SHIPMENTS

	Flour	Wheat	Corn	Oats	Rye
Primary points—					
Chicago	106	299	1,380	352	222
Duluth	..	1,137	869	..	..
Indianapolis	..	1	181	80	5
Kansas City	115	153	395	60	..
Milwaukee	2	..	137	20	2
Minneapolis	97	630	409	268	89
Omaha	..	71	393	64	..
Peoria	44	174	340	18	6
Sioux City	..	9	125	..	..
St. Joseph	..	43	87	32	..
St. Louis	86	66	370	76	15
Wichita	..	192	..	..	..
Totals	450	2,774	4,686	970	339
Seaboard—					
New York	..	491	..	..	..
Philadelphia	..	16	..	..	..
Totals	..	*507	..	..	..
Grand totals	450	3,281	4,686	970	339
Last week	416	4,193	5,291	1,288	248
Last year	468	3,661	4,749	790	528

*491,000 bus bonded. †Some allowance should be made for duplication.

Flaxseed Receipts, Shipments and Stocks

Receipts, shipments and stocks of flaxseed at principal primary points for the week ending May 9, in thousand bushels, with comparisons:

	Receipts		Shipments		Stocks	
	1942	1941	1942	1941	1942	1941
Minneapolis	125	112	31	32	1,926	2,591
Duluth	5	46	244	240	637	434

Rye Flour Output

Following is the rye flour output reported to The Northwestern Miller by mills at Chicago, Minneapolis and outside points in the Northwest, in barrels, with comparative figures for the previous week:

	Week ending May 2	Week ending May 9
Five mills	14,221	13,749

Where High Gluten Flour Is in Demand

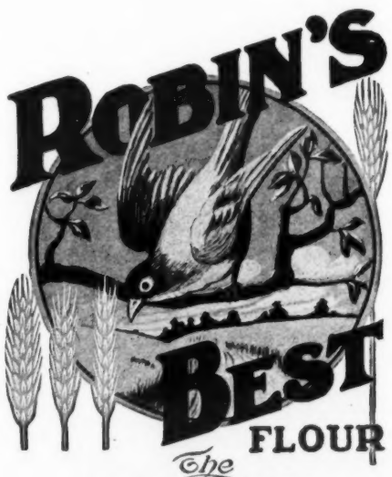
CHIEF JO

Gets First Consideration

It's of the famous "Jo" family of flours and produced from premium wheat; wheat that is premium in price because "premium" in quality of gluten. We check carefully on that in the best spring wheat market in America.

A sample order will convince—write

WABASHA ROLLER MILL COMPANY
Wabasha, Minnesota
Our 60th Anniversary of Quality Milling
1882 - 1942



The ROBINSON MILLING COMPANY
SALINA, KANSAS

Export Flour Insured ALL RISKS by
The Sea Insurance Co., Ltd.
of LIVERPOOL
U. S. Branch Assets.....$4,904,187
Capital Deposited in U. S...... 500,000
Surplus for Protection of Policyholders..... 2,930,199
ORIGINATORS OF ALL RISKS
Insurance on Flour
Policies of this Company are held by all leading millers
CHUBB & SON
United States Managers
90 John Street - - New York
Insurance Exchange - Chicago
Hurt Building - - Atlanta, Ga.
Royal Bank Building - - Montreal

PERSONAL & OTHERWISE

CALLED TO CHICAGO

W. P. Craig, of W. P. Craig & Co., Atlanta flour brokerage firm, and Mrs. Craig, left Atlanta on May 9 for Chicago, where they were called by the death of Mr. Craig's brother-in-law.

LIEUTENANT JUNIOR GRADE

Phil Dunlap, formerly with General Mills, Inc., Atlanta divisional office, has received his commission as lieutenant junior grade in the U. S. Navy. Approximately 14% of the personnel of the southeastern divisional office of General Mills is now serving in the United States armed forces.

1962 SALESMAN?

The New York offices of the International Milling Co. report the possible accession, on May 5, of a 1962 flour salesman, in young Thomas Clawson, newly arrived son of K. V. Clawson, salesman in the New York metropolitan area.

AT DAUGHTER'S HOME

Cyrus S. Coup, president Northwestern Elevator & Mill Co., Toledo, Ohio, spent last week end in St. Louis, Mo., on a visit with his married daughter who lives there.

BACK AT OFFICE

Robert DuBois, eastern division of General Mills, Inc., Boston, has recovered from his recent illness and, after six weeks of absence, is back at his office.

AT CONFERENCE

Fred Quigley, Boston manager of the Russell-Miller Milling Co., went to St. Louis, Mo., last week for a conference of company representatives.

IN ST. LOUIS

S. L. Rice, president Rice Grain Co., Metamora, Ohio, and president of the Grain and Feed Dealers National Association, was in St. Louis calling on his friends last week.

SALES MANAGER

Phil Costello, formerly with the Inland Milling Co., Des Moines, Iowa, is now sales manager for the Teichgraeber Milling Co., Gypsum, Kansas.

MOTHER'S DAY FURLOUGH

Joe D. Williams, of the United States Coast Guard, now stationed at Cape Girardeau, Mo., spent Mother's Day week end with his mother and father, Mr. and Mrs. Cohen E. Williams (flour and feed), Nashville, Tenn.

DELEGATES

C. P. Jacobs and Ernest Lewis, Colonial Milling Co., Nashville, Tenn., attended the state convention of the Travelers Protective Association in Memphis, Tenn., on May 8-9, as delegates from the Nashville post.

SECOND LIEUTENANT

Thomas C. Morrow, son of THE NORTHWESTERN MILLER'S veteran correspondent at Buffalo, N. Y., Major W. V. Morrow, commanding officer of the Army Recruiting and Induction Station and Aviation Cadet Examining Board for Buffalo and western New York, was among the graduates, on May 9, at the Officers' Candidate School, Anti-Aircraft Artillery, Camp Davis, N. C. The son previously had been an enlisted man and sergeant in the 209th Coast Artillery. He entered the army shortly after his graduation from Duke University in 1940. He has been commissioned as a second lieutenant.

CALLING ON TRADE

W. R. Moore, Valier & Spies Milling Co., St. Louis, left last week for a trip through the central states and the East calling on the trade and brokerage connections.

NASHVILLE VISITORS

C. B. Smith, St. Mary's (Mo.) Mill Co; Charles Randall, H. C. Cole Milling Co., Chester, Ill; Bert Ingels, Wallace & Tiernan Co., Inc., Newark, N. J., and Claude T. Alexander, Yukon (Okla.) Mill & Grain Co., visited Nashville flour buyers last week.

BACK FROM ATLANTA

Bernard Evers, president and manager of the American Bread Co., Nashville, Tenn., has returned from the Southern Bakers Association convention in Atlanta, Ga., where he was very much interested in discussions by government officials on sugar, tires, gasoline and price control.

BACK TO PURINA

G. S. Crowe, who traveled for Purina Mills, Nashville, Tenn., from 1926 through 1931, at which time he entered the feed business for himself, operating under the name of the Acme Feed & Grain Co., has returned to Purina. Two years ago he sold the Acme business to become a member of the Tennessee State Vocational Agricultural Department.

MILLERS IN CHICAGO

Among millers visiting in Chicago last week were: O. D. Fisher, Fisher Flouring Mills Co., Seattle, Wash; Austin Morton, Shellabarger Mill & Elevator Co., Salina, Kansas; R. Everett, King Midas Flour Mills, Minneapolis; L. B. Denison, P. R. Fossen and Mr. Tollefson, State Mill and Elevator, Grand Forks, N. D.

APPENDIX IN BALTIMORE

Fred N. Burrall, sales supervisor for the William Kelly Milling Co., Hutchinson, Kansas, couldn't get a plane booking to return home, so he left his appendix in Baltimore, Md., where the necessity for an immediate operation became apparent in the course of a recent business trip.

FLOUR REPRESENTATIVE

Jeremiah A. MacNair, H. J. Greenbank & Co., New York, N. Y., has been nominated as a member of the board of managers for the New York Produce Exchange as a representative of the flour trade.

VISITORS IN GOTHAM

Logan P. Johnson, Atkinson Milling Co., Minneapolis, was a recent visitor at the newly decorated office of H. J. Greenbank & Co., New York representatives of the mill. David S. Jackman, treasurer and general manager Kansas Milling Co., Wichita, was another out-of-town miller sojourning in Gotham. He made his headquarters with the S. R. Strisik Co.

EXTENSIVE SWING

T. E. Higley, assistant sales manager for the William Kelly Milling Co., Hutchinson, Kansas, is making an extensive swing through the central states to visit connections.

TRADE VISIT

R. B. Laing, sales manager for the Abilene (Kansas) Flour Mills Co., is on an extended visit with the trade in southeastern states.

ABOUT TO RETIRE

L. E. Points, general agent at Minneapolis for the American Refrigerator Transit Co., will retire June 1. Mr. Points has been in the railroad business in Minnesota for 28 years, and although he has not been calling on the grain and milling trades in recent years, he still has many friends in these industries and says he is sorry to lose contact with them.

TROUBLE SHOOTER

William J. deWinter, export manager for the Russell-Miller Milling Co., Minneapolis, is in New Orleans, in an endeavor to expedite shipments from that port.

OBITUARY

W. G. FERGUSON

W. G. Ferguson, 72, who was the father of T. E. Ferguson, of the Brackett Grain Co., and of Carl D. Ferguson, of the C. M. Carter Grain Co., both of Fort Worth, Texas, died on May 8. Though for some time he had been in poor health, and not long ago had been seriously ill, he had been showing marked improvement and the end was quite unexpected.

MRS. CARRIE K. SCHMIDT

Believed to have been stricken with paralysis on May 4, Mrs. Carrie K. Schmidt, 62 years old, wife of Charles Schmidt, chairman of the board of the Schmidt Baking Co., Inc., Baltimore, Md., fell at her home, sustaining injuries which, with shock, caused her death at a Baltimore hospital about an hour later.

COATAS COSTAKOS

Coatas Costakos, 73, who founded the Hellenic Baking Co., Providence, R. I., 35 years ago, died April 28. He was born in Sparta, Greece. The bakery which he founded now is a large wholesale bakery. He retired several years ago but retained the post of president.

CHARLES CLARK GUMBERT

Charles Clark Gumbert, 81, veteran flour mill operator, died at his home in New Bethlehem, Pa., April 30. At the

DEEP IN THE HEART OF TEXAS

Attendance at the forty-second annual convention of the Texas Bakers Association almost broke all records and did manage to set a second all-time high. The meeting was held April 19-21 in San Antonio. Here are some of the delegates. Upper left: Julius Golman, Golman Baking Co., Dallas; and Arthur Schneider, Mrs. Schneider's Bakery, San Antonio, who is one of the directors. Upper right: Vice President George O. Jones, Jones' Fine Bread Co., Waco. Lower left: William Finney, Finney's Bakery, McKinney, a director. Lower right: left to right, Al Cloteaux, Anheuser-Busch, Inc., San Antonio; Secretary Roy Braden, Braden's Bakeries, Dallas; and re-elected President Otto Richter, Richter's Bakeries, Corpus Christi, Texas.

time of his death he was owner of the Red Bank Mills. At an early age he had engaged in the milling trade in Michigan; then, for a number of years, he was head miller at a mill in Knoxville, Tenn. Upon his return to New Bethlehem, he engaged in business for himself. Mr. Gumbert was active in the affairs of the Pennsylvania Millers and Feed Dealers Association and served as its president some years ago.

WILLIAM H. FISHER

William H. Fisher, representative of the Shellabarger Mill & Elevator Co. at Atlanta, died May 8, following an operation. He was 51 years old.

GEORGE KRANSEL

George Kransel, National Grain Yeast Corp., Chicago, died on May 11 as the result of a ruptured appendix.

——BREAD IS THE STAFF OF LIFE——

MICHIGAN OPERATIVES MEET AT STOCK MILL, HILLSDALE

Members of A.O.M. District 6 were guests of F. W. Stock & Sons when they held their spring meeting in Hillsdale, Mich., April 25. Luncheon at the Hotel Keefer followed inspection of the mill, and later a session was held at the plant.

A timely talk titled "Protection of Mill Property During the Emergency" was given by L. P. Dendel, of the Michigan Millers Fire Insurance Association, in which emphasis was placed on the importance of proper fence inclosures, watchman service, and alertness of all plant employees to prevent fire damage and sabotage. Instruction in the handling of incendiary bombs was given. Mr. Dendel said that he considered sabotage, rather than bombing, the major danger, however.

John Zingle, of the Mayflower Mills, Fort Wayne, Ind., made an appeal for the utmost in patriotism, loyalty and the acceptance of responsibilities, which was warmly received. If we were to "keep 'em flying and rolling," Mr. Zingle said, we must keep the wheels of the mills turning with the greatest possible efficiency.

A comprehensive talk on the subject of Michigan's farm crops and their relation to wheat acreage was made by Dr. Howard Rather, of Michigan State College. Dr. Rather spoke about the prevailing varietal preferences for the soft red winter, Bald Rock, and the soft white winter, American Banner. He stated that the college invariably considered commercial and baking tests of new varieties before releasing them to growers. He described at some length the relation of varietal characteristics to the influence of climatic conditions common to the state.

A vote of thanks was given Harold Stock for his fine hospitality. July 11 was set as a tentative date for the next meeting of the district, at Michigan State College, in East Lansing.

——BREAD IS THE STAFF OF LIFE——

MINNESOTA BAKERS STRESS VICTORY PLANS AT MEETING

ST. PAUL, MINN.—"United we will glory in victory" was the theme of the annual convention of the Associated Bakers of Minnesota in session at the Lowry Hotel in St. Paul, May 12-13.

The wartime aspect of the meeting was emphasized the minute a delegate stepped into the convention hotel, with a huge "V" for victory cake occupying a central position in the lobby. Activities on the opening day were started off with an allied trades breakfast with 55 in attendance. Opening speeches included a welcome from the city's mayor, the presidential address and various committee reports.

On May 11, bakers took part in a special Twin City quiz program over radio station WCCO. Minneapolis was represented by L. E. Christman, J. H. Manning, Mrs. William B. Thomson and Mrs. C. G. Krause. The St. Paul team was composed of Martin Olson, Alfred J. Munn, Mrs. Lloyd Kolby and Mrs. Adolph Neuburger. War stamps were given to the contestants according to their rating, with the St. Paul contingent piling up the larger total.

——BREAD IS THE STAFF OF LIFE——

JOHN HAGY HEADS SALES FOR FREIHOFER COMPANY

John Hagy, for more than 20 years connected with the baking industry in Philadelphia, much of that time with the General Baking Co., has been appointed vice president in charge of sales by the Freihofer Baking Co., Philadelphia, Pa.

——BREAD IS THE STAFF OF LIFE——

Bonded Grain in the United States

Bonded grain in the United States May 9, in bushels (000's omitted):

	Wheat	Corn	Oats	Rye	B'l'y
Baltimore	1,268	..	..	..	..
Boston	1,963	..	..	..	..
Buffalo	5,232	..	..	288	..
Afloat	507	..	..	..	..
Duluth	..	..	..	..	57
New York	1,537	..	..	..	..
Afloat	223	..	..	..	..
Philadelphia	368	..	..	..	..
Canals	430	..	..	..	..
Lakes	601	..	..	..	..
Totals	12,129	..	..	288	57
May 2, 1942	10,492	..	..	219	67
May 10, 1941	25,616	..	185	2,251	89

UNITED STATES VISIBLE GRAIN SUPPLY

Visible supply of grain in the United States, as compiled by the secretary of the Chicago Board of Trade, in bushels (000's omitted), of date May 9, and corresponding date of a year ago:

	Wheat		Corn		Oats		Rye		Barley	
	1942	1941	1942	1941	1942	1941	1942	1941	1942	1941
Baltimore	7,090	119	613	715	10	11	96	87	139	2
Buffalo	7,537	4,089	8,859	2,310	345	543	3,533	216	136	47
Afloat	253	158	..	334	..	..	..	..	..	..
Chicago	10,947	8,763	14,044	13,263	1,301	886	4,288	1,987	279	306
Afloat	..	..	187	..	..	..	253	..	..	..
Detroit	180	165	3	2	4	4	100	2	270	170
Duluth	32,644	18,845	5,079	1,729	186	88	1,527	505	488	811
Fort Worth	9,195	7,085	407	575	135	63	15	1	57	13
Galveston	4,822	340	..	24	..	..	..	..	..	..
Hutchinson	8,639	6,425	..	..	..	..	..	..	..	..
Indianapolis	1,275	1,184	2,450	1,252	255	293	84	123	..	..
Kansas City	33,877	25,278	6,215	7,229	88	15	358	272	349	32
Milwaukee	2,712	431	1,379	3,028	65	33	1,101	..	818	824
Minneapolis	35,788	23,975	4,202	9,261	829	1,323	4,933	1,515	2,280	2,179
New Orleans	1,678	56	134	234	5	64	..	1	..	..
New York	505	7	281	36	22	..	3	39	..	..
Omaha	12,698	6,684	7,432	12,411	308	30	150	1	235	4
Peoria	845	499	485	280	..	3	..	..	156	62
Philadelphia	1,942	53	532	160	6	14	46	..	2	2
St. Louis	4,896	4,756	4,465	681	91	137	584	7	23	11
Sioux City	1,022	642	1,452	1,548	73	49	..	1	12	7
St. Joseph	5,190	3,455	804	2,130	157	157	6	7	13	5
Wichita	6,299	3,606	1	1	..	..	..	..	21	..
Lakes	..	293	..	223	..	..	..	..	..	..
Canals	25	..	180	25	..	135	..	..	..	..
Totals	190,059	116,933	59,204	57,561	3,880	3,713	17,077	4,764	5,228	4,475

MARKETS IN DETAIL

U. S. FLOUR MARKETS

THE SOUTHWEST

Kansas City: The slow pace of buying continues. Sales 23% of capacity, compared with 37% the previous week and 86% a year ago. Most mills still have sizable backlogs, which are being nibbled down slower than usual. Running time fell off after one good week, and directions still are not coming in well.

Clears unchanged to slightly lower, with demand relatively light. Export business very light, with concern about shipping space increasing daily.

Quotations, May 9: established brands family flour $6.55@6.80, bakers short patent $6.50@5.75, 95% $5.35@5.55, straight $5.25@5.45, first clear $3.90@4.10, second clear $3.60@3.85, low grade $3.50@3.65.

Of the mills reporting, 3 reported domestic business fair, 7 quiet, 6 slow and 13 dull.

Oklahoma City: Inactive market reflected in sales averaging 34%, compared with 20% last week and 78% year ago. All sales domestic, 70% of orders going to family trade and 30% to bakers. Operation declined, averaging 62% compared with 72 last week and 55 year ago. Prices fluctuated, closing unchanged to 20c higher. Quotations, May 9: hard wheat short patent $6.70@7.55, soft wheat short patent $6.70@7.55, standard patent $6.40@7.15, bakers extra fancy $6@6.10, bakers short patent $5.85@5.95, bakers standard $5.80@5.90.

Wichita: Sales ranging from slow to about 50%; directions from 60 to 82%; quotations higher.

Hutchinson: Buyers continue disinterested, with little new business booked. A few single cars and some mixed car business tell the story. Shipping directions fell to a mere trickle and operations promise to shrink.

Salina: Demand very slow, with prices about 10c bbl higher. Shipping directions show some improvement.

Texas: Expected increase in business has not materialized and demand is almost at a standstill for the present, probably due to the psychological effect of placing of price ceilings on other products. Shipping directions fair and operations maintained around 50% of capacity. Prices slightly higher. Quotations, May 8: family flour 48's, extra high patent $6.70@7.20, high patent $6.20@6.70, standard bakers 98's $5.85@6.15, first clears sacked $4.80@5.20, delivered Texas common points or Galveston domestic rate.

THE NORTHWEST

Minneapolis: Sharp falling off in sales. Only scattered baking inquiry reported from East; trade in central states territory at standstill. A few mills reported improvement in volume of shipping directions, but majority still complain.

Surface indications are that conditions generally with bakers not at all satisfactory. Only comparatively few have ordered out flour within contract time; with big majority, orders on mill books are delinquent, and carrying charges accruing. Bakers complain of dullness, and many have labor difficulties.

Clears more than holding own and commanding relatively better prices than for some weeks. Export inquiry nil. Cuban, West Indies and some South American buyers would ordinarily be in market for fresh supplies, but, since there has been delay in their getting deliveries against old bookings, they are not placing additional orders.

Total bookings by spring wheat milling companies in the Northwest last week totaled only 34% of capacity, compared with 52% a week earlier and 125% a year ago.

Quotations, May 12: established brands of family patent $6.45@6.55, spring first patent $6.10@6.20, standard patent $5.90@6, fancy clear $5.70@5.85, first clear $5.40@5.50, second clear $4@4.05, whole wheat $5.75@5.85, graham standard $4.60@5.10.

Interior Mills, Including Duluth: Only improvement noted by country millers was scattering, light demand for immediate shipment flour. No large bookings, but what there were were welcome, since they brought much needed shipping directions; purchases evidently of fill-in variety, since directions, on whole, against old contracts still very scarce. Good demand for millfeed reported at ceiling levels, but only for immediate shipment; everyone awaiting developments before anticipating future needs.

Duluth: Quotations, May 9: first patent $6.40, second patent $6.20, first clear $6.

THE CENTRAL WEST

Chicago: New business hard to get. Bakers complaining about business, and at present seem more concerned about governmental regulations on truck mileage, etc., than they are about buying flour. A slight pick-up in sales, a fair number of one, two and three car lot orders being made, but market not active. Directions only fair. Family continues dull, and a 15c advance in the price did not stimulate buying; family market extremely quiet for over two months, and no immediate improvement looked for. Quotations, May 9: spring top patent $5.95@6.30, standard patent $5.75@6.15, first clear $5.35@5.70, second clear $3.95@4.25, family flour $7.75@7.90; hard winter short patent $5.70@6.10, 95% patent $5.40@5.90, first clear $4.50@4.90; soft winter patent $5.55@6, standard patent $5.35@5.80, first clear $4.65@4.95.

St. Louis: Practically no change in the situation of the past few weeks. Demand continues to drag. The usual car lot orders for quick shipment only fair. High protein and low ash clears in good demand, high ash and low proteins draggy. Price range unchanged. Jobbers find business about the same as of recent date. Buying consists of immediate requirements only. Specifications fair. Quotations, May 9: soft wheat short patent $6.35@6.90, straight $5.60@6.10, first clear $4.80@5.30, hard wheat short patent $5.70@6.10, 95% $5.50@5.85, first clear $4.40@4.80, spring wheat top patent $5.60@6.20, standard patent $5.55@5.90, first clear $5.30@5.75.

Toledo: Sales rather slow and dull, with tendency for operation to slump as crop year approaches end. With readjustments in foreground that may have to be made with coming of new crop, many millers not keen about making sales except where flour is to go out immediately and they can start grinding on it at once. All millers would like directions on uncompleted contracts and to get flour forward soon as possible. Ceiling on feed prices has little or no effect with some mills, as prices in March were high as at present. Course of events not causing buyers concern about flour requirements, but rather inducing them to hold off for further developments and clarification of situation. Mostly hand-to-mouth buying by those whose requirements not covered or whose contracts expiring.

Toledo bid for No. 2 red wheat, 26c rate points to New York, May 8, was $1.19½, or 6c under Chicago July future. Flour prices more or less nominal. Quotations, May 8: soft winter wheat standard patent $5.55@5.75; locally made springs, high gluten $6.60, bakers patent $6.35; hard winter wheat bakers patent $6.25, in 98's, f.o.b. Toledo or mill.

Cincinnati: Outside of chain buying the market is very quiet, with demand almost nil. There is a feeling dealers have probably overbooked. Trend in prices firmer and supplies on all grades very ample. Quotations, May 11: spring short patent family $6.50@6.75, standard patent $6.25@6.50, first clear $5.25@5.50, hard winter short patent family $6.25@6.50, standard patent $5.75@6, first clear $5.25@5.50, soft winter patent family $5.75@6, standard patent $5.50@5.75, first clear $4.75@5.

EASTERN STATES

Buffalo: A fair amount of business transacted, due to interest worked up over the market advance of 10c bbl on patents and from 15 to 25c on clears. In addition, some substantial reductions have taken place in the old contracts which for many weeks have lessened demand, except for fillins and to round out stocks. The clears felt the effect of this latter factor the most, resulting in a more substantial price increase due to quick absorption of offerings. The continued and improved state of consumer buying reflected in a better flow of directions. Production, however, has not stepped up as yet very materially, but it is expected that it will in the next few weeks. The trade as a whole is watching the news closely, particularly measures proposed in Congress as to prices and other possible restrictions. Export trade light.

Quotations, May 9: spring fancy patent $8.25@8.35 bbl, top bakery patent $6.60@6.70, standard patent $6.50@6.60, spring straights $6.40@6.50, spring first clear $5.80@5.90, soft winter short patent $6.85@6.95, pastry $5.70@5.80.

New York: A slight spurt of business over the week end practically all reported, outside of an occasional car. Such sales chiefly to large bakers, with scattered jobbing business and for deferred shipment, as the wide differences between immediate and deferred prices had narrowed considerably and only 10@20c discounts offered. Main interest in spring high glutens and clears and as southwesterns firmed up, attention switched northward; Kansas and Texas high glutens within the same price range and slightly firmer than recent levels, as were cake grades. While some cheap quotations made on eastern soft winters, they are believed to fall more into the category of a high class clear than a straight flour.

Quotations, May 9: spring high glutens $6.50@6.85, standard patents $6.10@6.40, clears $5.80@6.10; Texas high glutens, $6.05@6.15; Kansas high glutens, $6@6.20, 95's $6@6.20; soft winter straights, $5.70@5.95.

Boston: A slight increase in new business indicated by reports of mill agents, but sales scattered and the sum total nothing to get excited about. The larger percentage of it went to southwestern patents, but in no case was there a sizable order. Trade still has a large volume of previous bookings to work off, and till this is done no general buying wave is expected barring unusual market developments. Bakers genuinely concerned over price ceilings and rigid delivery regulations affecting their

trucks, and are in no mood to consider buying unless they need it. Shipping directions, however, more encouraging and mill agents report fair success. It was stimulated by reported transportation regulations requiring capacity car shipments beginning May 15. Family business virtually at a standstill. Prices quoted by mills show slight variations and closed unchanged. Quotations, May 8: spring high glutens $6.70@6.80, short patents $6.50@6.60, standard patents $6.40@6.50, first clears $6.10@6.20; southwestern short patents $6.35@6.50, standard patents $6.20@6.30, Texas short patents $6.40@6.50, standard patents $6.25@6.35; soft winter patents $6.45@6.60, straights $6.15@6.30, clears $5.90@6.

Baltimore: Quotations steady, with demand little changed; receipts, 22,397 bbls, an increase of 569 bbls over last week. Quotations, May 9: spring first patent $6.70@6.95, standard $6.45@6.65, hard winter short patent $6.35@6.55, 95% $6.15@6.40, soft winter short patent $6.60@7.30, straight $5.20@5.55.

Philadelphia: Market continues firm, due to the strength in wheat and prices of most kinds are about 10c bbl higher. Demand, however, shows little improvement. Jobbers and bakers pretty well supplied and buyers operating cautiously and chiefly for small lots to satisfy current wants. Here and there, occasional sales noted, prompt shipment, at concessions. Quotations, May 9: spring wheat short patent $6.50@6.65 bbl, standard patent $6.30@6.45, first spring clear $5.90@6.10, hard winter short patent $6.25@6.45, 95% $6.10@6.25, soft winter straights $5.30@6.

Pittsburgh: Demand slow, prices 15c bbl higher. Jobbers and bakers apparently well supplied, as little interest manifested in market activities. Shipping directions lagging. Overbuying on part of average consumer blamed for lifeless family flour demand. Most bakers cautious in moves and keeping close lookout on developments in Washington affecting flour and allied trades. Demand for soft winter and rye flour moderate. Clears in brisk demand.

Quotations, May 9: spring short patent $6.45@6.85, standard patent $6.35@6.55, hard winter short patent $6.20@6.35, standard patent $6@6.15, low protein hard winter standard patent $5.90@6.05, spring clears $6.10@6.35, soft winters $4.95@5.15, bulk.

THE SOUTH

New Orleans: Indifference again among buyers to enter market for contracts for futures delivery despite upturn in wheat and flour prices. Steady volume of bookings for immediate to 30-days delivery continued with prices showing quite a discount under futures delivery. Southwestern hard wheat flours best sellers, with bread baking and jobbing industries best outlet. Northern spring wheat and Pacific Coast soft wheat flours slow; prices 10@15c bbl higher. Shipping directions good. Bread and cake production good, particularly former.

Quotations, May 9: hard spring wheat family patent $6.90@7.20, first patent $6.70@6.90, standard patent $6.40@6.60, fancy clear $6.10@6.35, first clear $5.85@6.05, second clear $5.25@5.65; hard winter wheat family patent $5.95@6.20, bakers short patent $5.70@5.90, 95% $5.50@5.70, first clear $4.45@5.05, second clear $4.05@4.35; soft wheat short patent $6.30@6.90, straight $5.55@5.90, first clear $4.65@5.

Atlanta: Dullness continues. Buyers generally remain pretty well supplied through contracts and feel no urge to purchase for future on current markets. Confusion due to new government regulations also taking its toll. Blenders show no interest and report outgo from plants below normal for time of year. Movement of flour to them slow to fair. Jobbers remain fairly well supplied, but those who are not are buying chiefly on hand-to-mouth basis, and these purchases are few and far between. A number feel that they cannot stay in business if they have to accept large car shipments. Deliveries picking up a little, but April was poor month and May not up to normal. Bakery contracts apparently ample and business with this side of trade slow and chiefly for fill-in purposes. Shipping directions from them only fairly good. Prices advanced 10@25c. Kansas family flours showing greatest increase.

Quotations, May 9: spring wheat bakers short patent $6.60@6.85, standard patent $5.50@6.60, straight $6.40@6.50, first bakery clear $6@6.25; hard wheat family short patent $7.20@7.30, fancy patent $6.80@6.90, standard patent $6.80@6.90, special or low grade $6.40@6.50; bakery short patent $6.10@6.40, standard patent $6@6.30, straight $5.90@6.20, first bakery clear $5.70; hard wheat low protein 95% $5.35@5.50, bulk; first clear $4.65@4.80, bulk; second clear $4.45@4.60, bulk; soft wheat family short patent $7.15@7.35, fancy patent $6.75@6.95, special or low grade $6.35@6.55; soft wheat short patent, bulk basis, $5.70@5.80; soft wheat 95% $5.45@5.55, bulk; straight $5.35@5.45, bulk; fancy cut-off $5@5.10, first clear $4.75@4.85, bulk; second clear $4.50@4.60, bulk; Pacific Coast soft wheat 95% $5.85@6, bulk, all-rail, f.o.b. Atlanta; self-rising family flours quoted 25c higher.

Nashville: New sales show improvement even while they were still limited to small lots. Buyers trying to clean up old contracts and be in position to book when they can get a bargain. Mills are not anxious to book for future shipment with millfeed prices still high.

Outbound business about unchanged. Bakers bought only a few "fill-in" lots. Their main problem at present is securing sufficient sugar for their cakes and pies, and due to the shortage of supply, they, in many cases, have cut out cookies and other small products which required sugar and were tedious to make. The smaller and medium-sized bakers bought, as usual, on a day-to-day basis. Shipping directions fairly good.

Prices approximately 5c higher. Quotations, May 9: soft winter wheat short patent $6.45@7.05, standard patent $6.15@6.45, fancy patent $5.85@6.15, clears $5.55@5.85, hard winter wheat short patent $6.05@6.35, standard patent $5.70@6.05, spring wheat short patent $6.35@6.95, standard patent $6.10@6.35.

PACIFIC COAST

Seattle: Markets continue very quiet, domestic buyers still inclined to go slow. Supplies in jobbers' and wholesalers' hands slowly being worked off in retail channels so they will not be able to stay out of the market much longer. Mills have had to curtail production due to the inability to ship the flour sold to the government and the lack of anything but domestic business. Quotations, f.o.b. Seattle or Tacoma, May 9: family patent $7.15@7.35, bluestem $7@7.10, straight soft white $5.75@5.90, pastry $5.80@5.90, Dakota $7@7.25, Montana $6.75@6.95.

Portland: Some improvement in inquiry in domestic circles, with heavier sales and better shipping instructions. Government instructions improved, but still coming along too slowly to suit most millers. Mill grindings improving this month over low level of less than 70% last month; but terminal mills were hit hardest by lack of water shipment. Export business very quiet, with outlets restricted to South American trade, and shipments on old government contracts.

Quotations, May 9: soft wheat straights, 98's, f.o.b. Nashville, $5.75@5.85; f.o.b. mill, 98's, all Montana $6.25@6.45; bluestem bakers, unbleached $6.15@6.35; bluestem bakers $5.90@6.10, Big Bend bluestem $5.90@6.10, cake $7.50@7.70, pastry $5.15@5.35, pie $5.15@5.35, fancy hard wheat clears $5.50@5.70; whole wheat, 100% $5.60@5.80, graham $5.05@5.25, cracked wheat $5.25@5.45.

San Francisco: Prices firmer, but sales confined to small scattered lots and no general buying developed. Bakers buying cautiously and holding to near-by requirements due to uncertainty in labor and price conditions. Quotations, May 9: eastern family patents $8.40@8.60, California family patents $8.20@8.40, Oregon-Washington bluestem blends $6@6.20, northern hard wheat patents $6@6.20, pastry $5.30@5.50, Dakota standard patents $6.25@6.40, Idaho hard wheat patents $5.80@6, Montana spring wheat patents $6.20@6.40, Montana standard patents $6@6.20, California bluestem patents $5.60@5.80, California pastry $5.20@5.40.

GRAIN FUTURES—CLOSING PRICES

Closing prices of grain futures at leading option markets, in cents per bushel:

WHEAT

	Minneapolis		Chicago		Kansas City		St. Louis		Duluth	
	May	July	May	July	May	July	May	July	May	July
May 6	117¼	119¼	121½	124¾	115½	115¼	....	....	115¼	115¼
May 7	117⅝	119⅝	122⅝	125⅜	116	117⅜	....	....	116⅝	117⅝
May 8	116¾	118⅝	122⅛	125¼	115	117⅛	....	....	116⅜	116⅝
May 9	116⅝	118⅜	122¼	124⅞	115½	117¼	....	....	116⅜	116
May 11	116¼	117⅞	121⅞	124⅜	114⅞	116⅝	....	....	115⅝	115½
May 12	115⅝	117¼	121⅝	124⅜	114¼	116½	....	....	115⅛	115

	Portland		Seattle		Winnipeg		Liverpool	Buenos Aires
	May	July	May	July	May	July	Closed	Closed
May 6	97	98⅛	98	99½	79¼	80⅜	....	....
May 7	98½	99⅛	99½	101	79¼	80⅜	....	....
May 8	98¼	99⅛	99	101	79¼	80⅜	....	....
May 9	98⅛	99⅛	99	101	79¼	80⅜	....	....
May 11	....	....	....	....	Holiday		....	....
May 12	....	....	....	....	79¼	80⅜	....	....

CORN

	Minneapolis		Chicago		Kansas City		**OATS** Chicago		Minneapolis	
	May	July	May	July	May	July	May	July	May	July
May 6	79¼	82⅝	86½	89¼	82⅜	85	58	56⅛	52	52⅝
May 7	80¼	83	87	90	83¼	85⅝	58⅛	57⅛	52½	53
May 8	80	82¾	86¾	89½	83	85¼	57¼	56⅛	52	52⅝
May 9	79¾	82⅞	87	89⅝	83	85¼	57¼	56⅜	52⅛	52⅛
May 11	80¼	83⅜	87⅜	90¼	83¾	85⅝	57¼	56¼	52¼	52⅜
May 12	80¼	83⅜	87⅛	90¼	83	85½	57½	56¼	51¾	52¼

	RYE Chicago		Minneapolis		**FLAXSEED** Minneapolis		Duluth		**BARLEY** Minneapolis	
	May	July	May	July	May	July	May	July	May	July
May 6	75½	78½	71¼	73¼	251	253½	251	....	58¼	60½
May 7	76⅛	79⅛	72	73⅞	255	257¼	255½	....	58⅜	60⅝
May 8	75⅛	78½	71⅝	73	254¾	257	254⅝	....	58¼	60½
May 9	75⅝	78¼	71½	72⅞	254½	257½	254½	....	58¼	60½
May 11	76⅛	78½	70⅞	73	252	253¾	252	....	58¼	60½
May 12	74⅜	77⅜	70¼	72	255	257	255	....	58⅝	61

SUMMARY OF MILLFEED QUOTATIONS

Week-end millfeed quotations, summarized from the market reviews, are based on carload lots, prompt delivery, per ton, packed in 100-lb sacks, f.o.b. at indicated points:

	Chicago	‡Minneapolis	Kansas City	St. Louis	Buffalo
Spring bran	$39.00@39.25	$....@37.00	$....@....	$....@....	$....@40.50
Hard winter bran	39.00@39.25	....@....	35.75@36.00	38.50@38.75	....@....
Standard middlings*	38.50@39.00	....@36.00	....@....	37.50@37.75	....@39.50
Flour middlings†	....@39.00	35.00@37.00	36.25@36.50	38.00@38.25	....@39.50
Red dog	39.50@40.00	36.00@37.00	....@....	....@40.00	....@38,00

	Baltimore	Philadelphia	Boston	Cincinnati	Nashville
Spring bran	$....@40.50	$44.00@44.50	$46.50@47.50	$....@....	$....@....
Hard winter bran	....@....	44.50@45.00	....@....	....@....	....@....
Soft winter bran	....@41.00	....@....	....@....	41.00@41.50	41.00@41.50
Standard middlings*	....@40.50	43.50@44.00	45.50@46.00	40.50@41.00	....@....
Flour middlings†	....@38.00	40.50@41.00	46.50@47.00	41.00@41.50	41.50@42.00
Red dog	....@37.50	40.50@41.00	....@41.75	....@....	....@....

	Spring bran	Shorts	Middlings
Toronto	$....@29.00	$....@30.00	$....@33.00
¶Winnipeg	....@28.00	....@29.00	....@....

*Brown shorts. †Gray shorts. ¶Fort William basis. ‡Tuesday prices.

CANADIAN MARKETS

Toronto-Montreal: Spring wheat flour sales small; competition for business keen, with result that prices were made attractive and buyers booked considerable quantities. Profitless prices prevailing in domestic market. Lists unchanged. Quotations, May 9: top patents $5.25 bbl, seconds $4.50, bakers $4.30, in 98's, jute, car lots, net cash, track, Toronto-Montreal territory.

Export business slow. Newfoundland did some buying. West Indies showing little interest and report of new regulations governing flour trade in Trinidad has reached Canadian millers. Apparently, grades are to be discontinued. British Ministry of Food placed no new business and Canadian mills have been asked to go slow on production of previous orders. Mill operations curtailed. Asking prices unchanged. Quotations, May 9: vitaminized flour for shipment to the United Kingdom, 28s 6d per 280 lbs, jute, f.o.b. seaboard, Montreal; 28s 9d@29s, United States ports.

Trade in Ontario winter wheat flour at a low point due to lack of wheat for grinding. Orders for flour occasionally refused. Buyers now bidding higher prices but getting little flour. Exports at a standstill. Quotations, May 9: pure Ontario winters $5.40@5.60 bbl, in second-hand jutes, Montreal: $5.30 bbl, bulk, Halifax, for export.

Winnipeg: Apart from hand-to-mouth domestic flour sales, business was flat, with no new export interest indicated. Mills, however, operating to capacity on recent contracts for domestic and United Kingdom. Supplies moving freely. Mills in cash wheat market for certain grades, but classifications in best demand restricted to light offerings and sales small. Quotations, May 9: top patent springs for delivery between Fort William and British Columbia boundary, $5.30, cottons; seconds, $4.80; second patents to bakers, $4.60.

Vancouver: Export trade is suffering from a virtually complete blackout.

The switch back to patent grades after the first flush of the new vitamin B grind continues. General opinion in the trade is that instead of general public acceptance of the new type of flour, initial experiments in general baking, coupled with absence of an extensive educational campaign, have resulted in steadily reduced sales. The trade feels that as long as patent flour is available and there is only a small difference in price between it and the new vitamin grind, the housewife will stay with the better known brands.

The pastry situation is little changed. Supplies of Ontario grinds are fair, with prospects of a steady flow due to the anticipated large harvest this year. The flour is offered to the trade at $7.60 on a cash basis. Of the hard wheat grinds, the cash price in cotton 98's is $5.40 for first patents and $4.90 for bakers patents and vitamin B.

MILLFEED MARKETS

Quotations Tuesday, May 12

Minneapolis: Market still difficult to analyze. Various ceiling levels heard of. Bran strongest item on list during March and quoted nominally at $37 here, std. midds. at $36, while flour midds., which dragged during March, would have to be quoted by some at as low as $35 in straight cars, but of this grade no straight cars to be had except from jobbers. Latter say they would have to ask at least $2 more to break even, and they have made sales this week at $37. For all May shipment, trade will pay mills' ceilings, but for June bids are $3@4 less. Mills, however, not caught up with back orders, so not interested in these bids. For present, naturally, there is little activity, and none looked for until mills operate more heavily and supplies catch up with demand.

Kansas City: Bran unchanged; shorts firm; bran $35.75@36, gray shorts $36.25@36.50.

Oklahoma City: Good demand; prices declined; bran $1.90@1.95 per bag of 100 lbs, mill run $1.92½@1.97½, shorts $1.95@2.

Wichita: Active; supply limited to fair; bran $36@36.50, shorts $35.50@35.70.

Hutchinson: Dull; trend weak; supply inadequate; bran and shorts sold at same

A SUMMARY OF FLOUR QUOTATIONS IN LEADING MARKETS

Week-end flour quotations, per bbl of 196 lbs, packed in 98-lb cottons or 140-lb jutes. All quotations on basis of carload lots, prompt delivery.

	Chicago	‡Minneapolis	Kansas City	St. Louis	Buffalo	New York	Baltimore	Philadelphia	Boston	Cincinnati	†Nashville
Spring first patent	$5.95@ 6.30	$6.10@ 6.20	$....@....	$5.60@ 6.20	$5.60@ 6.70	$6.50@ 6.85	$6.70@ 6.95	$6.50@ 6.65	$6.50@ 6.60	$6.50@ 6.75	$6.35@ 6.95
Spring standard patent	5.75@ 6.15	5.90@ 6.00	....@....	5.55@ 5.90	6.50@ 6.60	6.10@ 6.40	6.45@ 6.65	6.30@ 6.45	6.40@ 6.50	6.25@ 6.50	6.10@ 6.35
Spring first clear	5.35@ 5.70	5.40@ 5.50	....@....	5.30@ 5.75	5.80@ 5.90	5.80@ 6.10	....@....	5.90@ 6.10	6.10@ 6.20	5.25@ 5.50	....@....
Hard winter short patent	5.70@ 6.10	....@....	5.50@ 5.75	5.70@ 6.10	....@....	6.00@ 6.20	6.35@ 6.55	6.25@ 6.45	6.35@ 6.50	6.25@ 6.50	6.05@ 6.35
Hard winter 95% patent	5.40@ 5.90	....@....	5.35@ 5.55	5.50@ 5.85	....@....	6.00@ 6.20	6.15@ 6.40	6.10@ 6.25	6.20@ 6.30	5.75@ 6.00	5.70@ 6.05
Hard winter first clear	4.50@ 4.90	....@....	3.90@ 4.10	4.40@ 4.80	....@....	....@....	....@....	....@....	....@....	5.25@ 5.50	....@....
Soft winter short patent	5.55@ 6.00	....@....	....@....	6.35@ 6.90	6.85@ 6.95	....@....	6.60@ 7.30	....@....	6.45@ 6.60	5.75@ 6.00	6.45@ 7.05
Soft winter straight	5.35@ 5.80	....@....	....@....	5.50@ 6.10	....@....	5.70@ 5.95	*5.20@ 5.55	*5.30@ 6.00	6.15@ 6.30	5.50@ 5.75	6.15@ 6.45
Soft winter first clear	4.65@ 4.95	....@....	....@....	4.80@ 5.30	....@....	....@....	....@....	....@....	5.90@ 6.00	4.75@ 5.00	5.55@ 5.85
Rye flour, white	4.20@ 4.45	4.10@ 4.55	....@....	....@ 5.00	....@ 5.30	4.60@ 5.00	....@ 5.10	4.75@ 4.90	....@....	4.25@ 4.50	....@....
Rye flour, dark	3.50@ 3.80	3.30@ 3.75	....@....	....@ 4.30	....@ 4.60	....@....	....@ 4.40	....@....	....@....	3.50@ 3.75	....@....

	Seattle (98's)	S. Francisco	Standard patent— Seattle	San Francisco	Toronto	**Winnipeg
Family patent	$7.15@7.35	$8.20@8.40	Dakota $7.00@ 7.25	$6.25@ 6.40	Spring top patent¶	$....@5.25	$....@5.30
Soft winter straight	5.75@5.90	....@....	Montana 6.75@ 6.95	6.00@ 6.20	Spring second pat.¶	....@4.50	....@4.80
Pastry	5.80@5.90	5.30@5.50			Spring first clear¶	....@3.40	....@....

	Toronto	**Winnipeg
Spring exports‡	28s 6d	....
Ont. 90% patents††	$5.40@5.60	....

*Includes near-by straights. †Nashville prices basis f.o.b. Ohio River points for soft winter wheat flour. **In cottons, Fort William basis. ¶98-lb jutes. ††Second-hand jutes. ‡140-lb jutes. ‡Tuesday prices.

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price most of time; bran $36, mill run $35.75, gray shorts $35.50@36 (Kansas City basis).

Salina: Good; trend lower; supply adequate; basis Kansas City: std. bran $35.75 @36.25, gray shorts $35.50@36.

Fort Worth: Slowing up; trend lower; supply moderate; wheat bran $38.60@39, gray shorts $39.40@40, car lots, del. Texas com. pts. or Galevston domestic.

Chicago: Light; trend easy; supply not heavy; spring and hard winter bran $39@ 39.25, std. midds. $38.50@39, flour midds. $39, red dog $39.50@40.

St. Louis: Bran $38.50@38.75, pure bran $38.75@39, gray shorts $38@38.25, brown shorts $37.50@37.75, red dog $40.

Toledo: Still high; imposition of ceiling will not require reduction from present levels with some mills whose high March sales were as high as present levels; soft winter wheat bran $42@43.70, mixed feed $41@41.50, flour midds. $38.60, std. $37.50 @40.

Cincinnati: Demand fair, with the trend fairly steady and offerings very limited, especially on red dog and gray shorts; bran $41@41.50, gray shorts $41@41.50, brown very tight, quoted at 50c less.

Buffalo: Demand continued to absorb all offerings for near-by shipment; the trade awaited somewhat anxiously outcome of price ceiling regulations effective on May 11; trend firm; light output continued; bran $40.50, std. midds. $39.50, flour midds. $39.50, second clear $40, red dog $38, heavy mixed feeds $39.

New York: Fair; trend higher; supply limited; bran $45.25@46.25, std. midds. $44 @46, flour midds. $40.45@41.50, red dog $40.45@41.50.

Boston: A firmer tone developed; demand fair; trade's attention confined to near-by needs, with no interest in deferred shipment; offerings both East and West free enough, but no tendency to shade prices; bran and midds. from Buffalo quoted on a basis identical with the West; no Canadian feeds available; std. bran $46.50@ 47.50, std. midds. $45.50@46, flour midds. $46.50@47, red dog $41.75.

Baltimore: Good; trend steady; supply light; std. bran $40.50, pure soft winter bran $41, std. midds. $40.50, flour midds. $38, red dog $37.50.

Philadelphia: Light; trend weaker; supply more liberal; bran, std. $44@44.50, pure spring $44.50@45, hard winter $44.50 @45, soft winter nominal; midds., std. $43.50@44, flour $40.50@41; red dog, $40.50 @41.

Pittsburgh: Demand brisk; trend easier and lower; supply adequate; spring bran $43.50, red dog $43.

Atlanta: Good; trend unsteady; supply ample; bran $44.90@46, gray shorts $44.90@ 46.50, std. midds. $45@46.75, rye midds. $38.25@39, red dog $47@49.

Nashville: Demand light because of prices that are still high. Feeders using substitutes such as cottonseed meal, soybean meal, brewers' and distillers' grains, government ground wheat, which are much cheaper and are excellent feedstuffs; prices lower but still too high; bran $41@41.50, gray shorts $41.50@42 per ton delivered Nashville.

Seattle: Slow; trend steady; supply fair; $30.50@31.50.

Portland: Std. mill run $32, bran $33, shorts $34, midds. $36.

Ogden: Demand greater than supply. Business good but not much to sell. Trade brisk on small, immediate shipments, but few carload deliveries. Mills operating at capacity five days week, but flour deliveries down. Market values advanced. To Utah and Idaho dealers: red bran and mill run $32.50, blended $32.50, white $33, midds. $39, carload lots, f.o.b. Ogden. Denver prices: red bran and mill run $37.50, blended $37.50, white $38, midds. $44 ton. California prices: red bran and mill run $39.50, blended $39.50, white $40, midds. $46, car lots, f.o.b. Los Angeles. Millfeed prices for San Francisco shipments 50c under Los Angeles.

San Francisco: Coast markets firmer, with offerings light and demand improving; Kansas bran, $46.50@47; Utah-Idaho: red mill run $36.50@37, blended $37@37.50, white $37@37.50; Oregon-Washington: red mill run $36@36.50, std. $36.50@37, white $37@37.50; white bran $38@38.50, midds. $39.50@40, shorts $38.50@39; Montana: bran and mill run $39.50@40; California: blended mill run $36.50@37, white $37@ 37.50.

Los Angeles: Fair; trend steady; supply fair; Kansas bran $47, local midds. $41, local mill run $37.

Toronto-Montreal: Trend steady; demand slower; supplies improving but there is no surplus; cattle going into pasture, easing situation. Exports restricted, small quantities only crossing line. Prices in United States markets about $13.50 ton over Canadian. For values to domestic buyers deduct $4.50 ton, amount of freight subsidy, from following quotations, May 9: bran $29, shorts $30, midds. $33 ton, net cash, bags included, mixed or straight cars, track, Montreal freights.

Winnipeg: Demand keen; all supplies moving freely to eastern Canada, although some stocks from Alberta mills still going to British Columbia. No exports to United States or other destinations; no accumulation of supplies; bran $28, shorts $29, Man. and Sask; Alta., bran $25.50, shorts $26.50.

Vancouver: Trend steady, with prices continuing unchanged under ceilings. Domestic demand fair, with supplies easier to secure; stocks in dealers' hands are quite high, especially shorts; bran $29.80, shorts $30.80, midds. $33.80.

OATMEAL MARKETS

Toronto-Montreal: Sales of rolled oats and oatmeal declining as weather warms up. However, business normal for this time of year. Price unchanged. Quotations, May 9: rolled oats $3.25 per bag of 80 lbs, mixed cars, Toronto or Montreal.

Winnipeg: Demand moderate; mills operating only part time; no liberal stocks. Quotations, May 9: rolled oats, in 80-lb sacks $3.25 in the three prairie provinces; oatmeal, in 98-lb sacks, 20% over rolled oats.

Minneapolis: Rolled oats were quoted on May 11 at $3.55 per 90 lbs, bulk; 20-oz packages, $2.20 case; 48-oz packages, $2.35.

Millfeed Receipts and Shipments

Receipts and shipments of millfeed at the principal distributing centers for the week ending May 9, in tons, with comparisons:

	Receipts		Shipments	
	1942	1941	1942	1941
Minneapolis	...	...	7,300	6,400
Kansas City	1,725	1,650	3,825	3,425
Philadelphia	400	560	...	...
Milwaukee	300	40	2,740	2,260

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RYE PRODUCTS

Minneapolis and Interior Minnesota: A little inquiry, but evidently trade not satisfied with prices asked, for sales still light; directions continue fairly good, however; rye millers feel that trade will soon have to step in and replenish; pure white rye $4.10@4.55 bbl, in 98-lb cottons, f.o.b. Minneapolis, pure medium $3.90@4.35, pure dark $3.30@3.75.

Chicago: Business light; only scattered single car sales reported; white patent $4.20@4.45, medium $4@4.25, dark $3.50@3.80.

Pittsburgh: Demand moderate; trend unchanged; supply ample; pure white rye $5@5.30, medium $4.70@5, dark $4@4.25.

Philadelphia: Market generally firm and slightly higher; demand, however, limited and offerings ample; white patent, $4.75@4.90.

Cincinnati: Demand very quiet, with the market firmer; supplies ample; white $4.25@4.50, medium $4@4.25, dark $3.50@3.75.

Portland: Pure dark rye $5.45@5.55, medium dark rye $5.55@5.65, Wisconsin pure straight $6.15@6.25, Wisconsin white patent $6.40@6.50.

Baltimore: Quotations on rye flour and No. 2 rye steady; demand little changed; rye flour, dark to white $4.40@5.10 bbl; No. 2 rye, 90@95c bu; rye stock in local elevators decreased 6,300 bus during the week to a total of 95,788 bus.

New York: With little need among buyers, business dull; pure white patents $4.60@5.

Buffalo: Demand light; trend steady; supply ample; dark $4.60, medium $5.10, white $5.30.

St. Louis: Prices advanced 5c; sales and shipping instructions fair; pure white flour $5 bbl, medium $4.80, dark $4.30, rye meal $4.60.

SEMOLINA MARKETS

Minneapolis: No activity, not much interest shown in fresh supplies for any delivery; scarcity of shipping directions seems more pronounced, if possible; durum mills operating not much better than half capacity; prices advanced during week, but have reacted to last week's levels: fancy No. 1 semolina $6@6.10 bbl, bulk, f.o.b. Minneapolis, standard No. 1 $5.70@5.80, granular $5.60@5.70.

In the week ended May 9, nine Minneapolis and interior mills made 57,717 bbls durum products, against 67,000 in the previous week.

Pittsburgh: Demand limited; trend steady; supply adequate; No. 1 $6.60, nominal, bulk.

Philadelphia: Quiet and somewhat irregular; offerings moderate but ample; No. 1 fancy $6.90, bulk; No. 1 regular, $6.45@6.65.

Chicago: For the first time in weeks some business reported. Buying not general, but a few agents reported fair-sized sales; No. 1 semolina $6.20@6.35, standard No. 1 $5.90@6.05.

Buffalo: Interest in new purchases was very light, due to advance in prices which dampened buying temporarily; also shipping directions lagged; trend firm; supply ample; on bulk basis, lake and rail, f.o.b. Buffalo: No. 1 $6.80, durum fancy patent $6.80, macaroni flour $6, first clear $5, second clear $4.20, durum granular $6.40.

St. Louis: Sales and shipping instructions fair; first grade semolina $7.15, granular $6.70, No. 3 $6.50, fancy patent $7.15, bulk.

United States Grain Stocks

Commercial stocks of grain in store and afloat at the principal markets of the United States at the close of the week ending May 9, 1942, and May 10, 1941, as reported to the United States Bureau of Agricultural Economics, in bushels (000's omitted):

	American		Canadian in bond	
	May 9 1942	May 10 1941	May 9 1942	May 10 1941
Wheat	227,314	137,858	13,814	34,429
Corn	65,062	63,563	...	...
Oats	4,163	4,453	2	91
Rye	17,202	4,942	1,344	2,664
Barley	6,052	4,876	57	60
Flaxseed	2,725	3,025	...	...

Stocks of United States grain in store in Canadian markets May 9 (figures for corresponding date a year ago given in parentheses): wheat, none (228,000) bus; corn, none (734,000); oats, none (47,000); rye, none (24,000); barley, none (none).

Millfeed Futures Open Interest

Following table shows open contracts at Kansas City and St. Louis on May 11, in tons. This is the short side of contracts only, there being an equal number of tons open on the long side.

	Kansas City Bran	Kansas City Shorts	St. Louis Shorts	*St. Louis Bran	*St. Louis Midds.
May	3,325	3,200	100	4,825	450
June	3,750	1,800	..	4,950	400
July	800	725	..	2,225	400
August	1,100	600	..	3,300	..
September	..	..	..	2,200	..
October	..	..	..	700	..
Totals	9,975	6,525	100	18,200	1,250

*Delivered in Chicago.

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PURE RYE FLOUR
We make a high-grade pure winter rye flour
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FISHER & FALLGATTER
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Food Control

(Continued from page 23.)

cause of the high price of flour. There had already been some incipient bread riots in New York and other cities, and more serious trouble was expected.

FIXED-PRICE SENTIMENT

For several weeks Senator Reed of Missouri obstructed passage of the food control bill. In the meantime, a very strong element expressed itself in favor of establishing a fixed price for wheat low enough fully to satisfy the demands of the consumer for a cheap flour. They placed this price at $1.50 bu. Wheat was then selling at from $2.50 to $3.00 or more a bushel in the western markets.

Unable to proceed with any degree of security, the millers were operating on a hand-to-mouth basis. There was sufficient wheat in the country amply to supply all domestic requirements, and farmers were eager to sell it at the prices then obtainable. With the apparent prospect ahead that the price of wheat might any day be fixed on a low basis, millers did not dare purchase in sufficiently large quantities to run their mills to capacity. The difference between the prevailing price and that which might be fixed was so great as to insure ruin to the miller caught with any considerable stock of raw material on hand when the new price was made. Previous to the crisis, speculation had been discontinued; in consequence, it was impossible for the millers to purchase supplies of wheat and protect themselves against its future decline in the customary way.

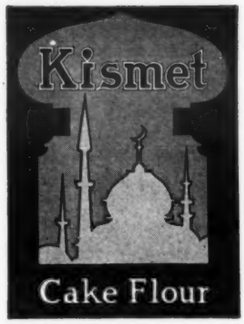
New wheat was just beginning to come into market in the southern extremity of the wheat zone and the price asked for it was far above the proposed fixed basis, indeed much above the price that was subsequently fixed. The result was an industrial deadlock. Mills which should have been operating to their full capacity in order to meet the demand were obliged to run with the utmost conservatism, and bankruptcy threatened those that had large stocks of wheat on hand, bought at high prices.

In this emergency, William C. Edgar, then editor of THE NORTHWESTERN MILLER, went to Washington and laid before Mr. Hoover a brief covering the perilous situation and urging immediate action to prevent a disaster. This was accompanied by a plan of organization and operation under which millers might be protected against the result of an arbitrary wheat price lower than the cost of their own stocks.

Mr. Hoover realized the need for immediate action, but he was unable to move since Congress had not given him the necessary authority to create a definite organization. After consulting with the President, however, he decided to proceed with a tentative, purely voluntary and advisory organization of the milling industry on the plan suggested to him.

Authority was given to call into consultation a committee of millers selected as representative of the various sections of the country. James F. Bell was appointed chairman by Mr. Hoover, with the following as members: Albert C. Loring, Minneapolis; Bernard A. Eckhart, Chicago; Samuel Plant, St. Louis; Andrew J. Hunt, Arkansas City, Kansas; E. M. Kelly, Nashville; Mark Mennel, Toledo; Theodore B. Wilcox, Portland,

FOR BAKERS



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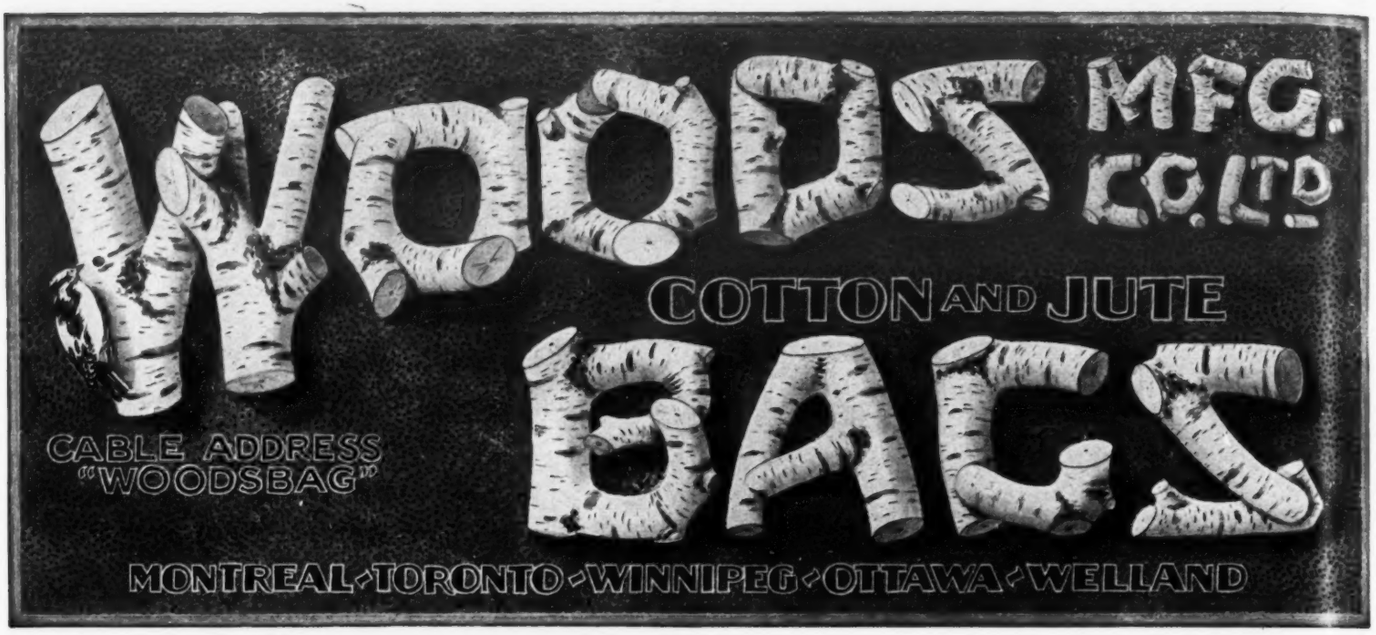

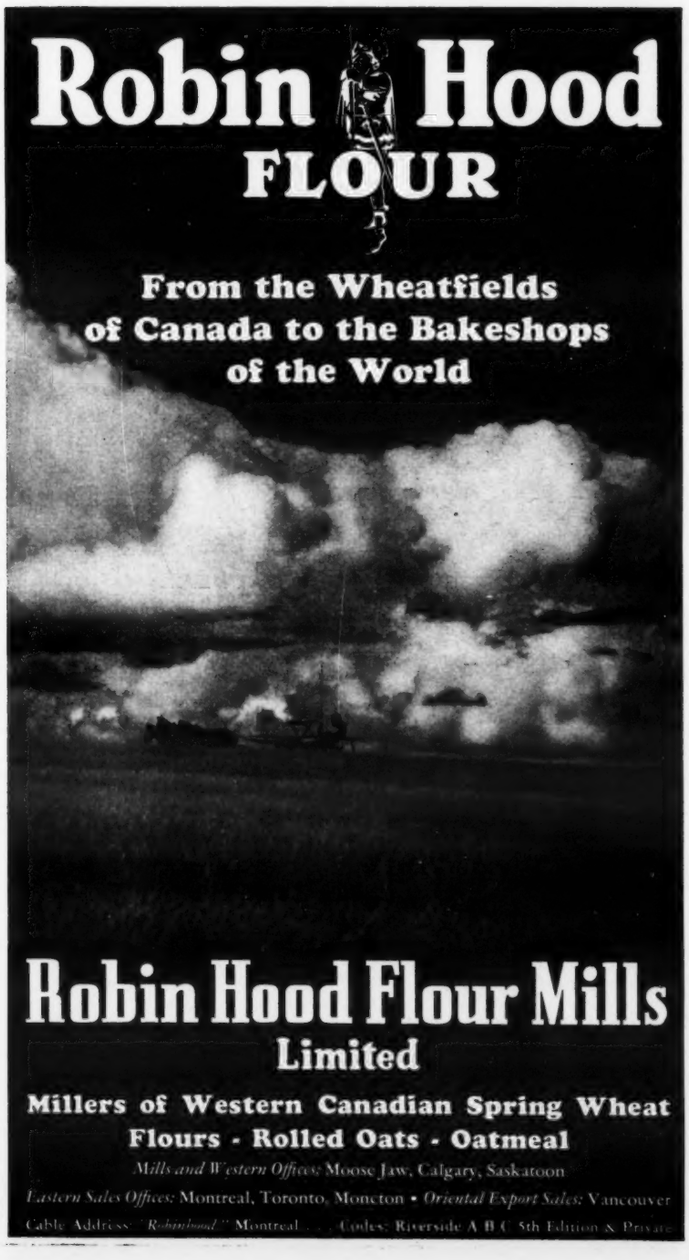
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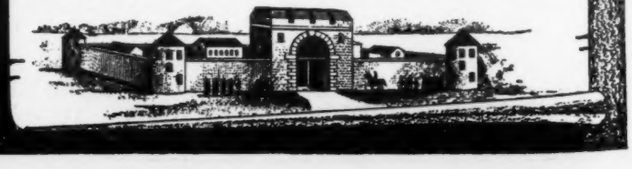

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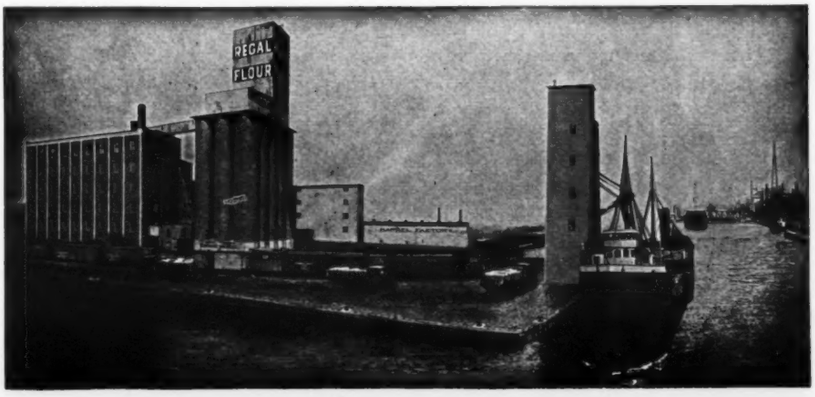

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"Fleur de Lis"
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3,000 barrels per day
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Oregon, and Fred J. Lingham, Lockport, N. Y. A. P. Husband, secretary of the Millers National Federation, acted as its secretary, and William C. Edgar was present in an advisory capacity.

This group, styled the United States Millers' Committee, met in Washington at the Shoreham Hotel, on June 22, and was addressed by Mr. Hoover. It verified and indorsed the representations already made to him concerning the perilous state of the trade and the imminent danger of an acute shortage of flour in the industrial centers of the East. Many conferences were held and, as a result, the basis of an understanding with the prospective food administrator was reached.

Geographically the milling industry was divided into sections or divisions, and these again were subdivided. Each member of the committee was made the chairman of one of these divisions, and chairmen of the subdivisions were appointed by them. Mr. Bell was made the general chairman of the whole organization, or, as the phrase then employed was, the "milling executive."

The basis of this agreement was that of voluntary co-operation with the prospective food administrator on the part of the trade, with a limited net profit per barrel on the product and a system of self-government for the industry. To this members of the committee pledged the support of the whole trade. Such assurances as it was possible to give under the circumstances were made to millers, who, acting in good faith and for the welfare of the public, had purchased wheat at the ruling price and might not be able to dispose of the product made from it before a lower price was fixed by the government. As things turned out, by the time a government price for wheat was established they had been able to dispose of the flour made from earlier purchases, and the loss on this account proved trifling.

The preliminary arrangement with Mr. Hoover, which was necessarily tentative, became the basis upon which the milling industry was permanently organized after Congress, on Aug. 10, 1917, finally passed the food control bill, under the terms of this measure.

Mr. Hoover was immediately made food administrator and was thus given full authority to make his advisory appointments official. He at once confirmed the arrangements previously made with the United States Millers' Committee, and this emergency organization became the Milling Division of the Food Administration, with James F. Bell as general chairman, headquarters New York City. The divisional chairmen were members of the original committee, with the exception of Seward B. McNear, of San Francisco, who was appointed chairman of Division No. 9 (South Pacific Coast), subsequently established in order to differentiate between the mills of Washington and Oregon and those of California, whose interests were not identical and which could not remain in one jurisdiction. The divisional organization was as follows:

1. *Northwest:* Albert C. Loring. Minneapolis, Charles C. Bovey; Duluth, Benjamin Stockman; Minnesota, Northern Wisconsin and Iowa, W. L Harvey, New Prague, Minn; Montana and Wyoming, J. W. Sherwood, Great Falls, Mont.; North Dakota, H. S. Helm, Minneapolis; South Dakota, George P. Sexauer, Brookings.

2. *Southwest:* Andrew J. Hunt. Kansas City, L. S. Mohr; Missouri River, Robert R. Clark, St. Joseph, Mo.; Kansas, Henry Lassen, Wichita; Oklahoma, George G. Sohlberg, Oklahoma City; Nebraska, Chauncy Abbott, Jr., Schuyler; Colorado, J. K. Mullen, Denver; Texas, Frank Kell, Wichita Falls.

3. *Southeast:* E. M. Kelly. Kentucky, S. Thruston Ballard, Louisville; Tennessee, J. B. McLemore, Nashville; East Tennessee, C. Powell Smith, Knoxville.

4. *St. Louis and Illinois:* Samuel Plant. Illinois, H. B. Sparks, Alton, Julius Postel, Mascoutah; Missouri, A. J. Eisenmayer, Springfield, O. M. Friend, Hannibal.

5. *Ohio Valley:* Mark N. Mennel. Ohio, B. W. Marr, Columbus, T. J. Hanley, Coshocton; Indiana, T. S. Blish, Seymour, Carl Sims, Frankfort; Michigan, Robert Henkel, Detroit, F. T. King, Lowell.

6. *Chicago and Milwaukee:* Bernard A. Eckhart; Chicago and Northern Illinois, Frank B. Rice, Chicago; Milwaukee, Walter Stern.

7. *Eastern:* Fred J. Lingham. New York City, A. P. Walker; New York State, W. V. Hamilton, Caledonia; Boston, Bernard J. Rothwell; Pennsylvania, George C. Shane, Philadelphia; A. T. Collins, Mount Pleasant; Virginia, Thomas L. Moore, Richmond; Maryland, William H. Hayward, Baltimore.

8. *North Pacific Coast:* Theodore B. Wilcox. Washington and Oregon, O. D. Fisher, Moritz Thomsen, Seattle.

9. *South Pacific Coast:* Seward B. McNear, San Francisco.

EDITOR'S NOTE—*The story of Uncle Sam as a "head miller"—which is to say the story of the Milling Division of the Food Administration—will go on in an early issue, dug up and dusted off from the files of a quarter of a century ago.*

——BREAD IS THE STAFF OF LIFE——

BOWLING MATCH FEATURES WISCONSIN ALLIED MEETING

MILWAUKEE, WIS.—Approximately 30 allied tradesmen attended the regular monthly meeting of the Wisconsin Flour, Bakers and Allied Trades Association April 24 at the Sports Bowl, West North Avenue. Following a short business session featuring a discussion on proposed ways and means of eliminating "racket" contributions which the retail bakers and allied tradesmen have been subjected to in recent years, six four-men teams were formed for the bowling tournament which featured the evening.

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"It ain't that. Sometimes I snip off a bit of ear."

THAT'S IT

He—Since I met you I can't eat, I can't sleep, I can't drink.

She (shyly)—Why not?

He—I'm broke.

BETTER WAY

Moe—How much of your salary do you take home to your wife on pay day.

Joe—None of it.

Moe—How's that?

Joe—She meets me outside the office and takes it home herself.

YOU CAN'T WIN

Rousty—Here's a story about a guy who offered his son $50,000 if he'd give up his bad habits.

Second Rousty—Yeah, and what would a guy do with $50,000 if he didn't have no bad habits?

OH!

Navy Bill opines: "Before marriage a man yearns for a woman; and after that the 'y' is silent."—*U.S.S. Idaho Yarn.*

GOB HUMOR

And then there was the dumb sailor who thought that a mushroom was a breakfast nook.—*U.S.S. Trenton Telescope.*

PRECAUTIONARY

The Negro witness was being cross-examined about a former friend.

Counsel—Do you suggest he is a thief?

Negro—I wouldn't say he is a thief, suh, but I do say dis, if I was a chicken, an' I saw him loafin' around, I'd sure roost high.—*Typo Graphic.*

IT'S NO USE

"Did you smile at your troubles as I advised you?"

"Yeah, and the boss told me three times to wipe that silly grin off my face and get to work."

HARD TO PLEASE

"How do you like your new boss, Mayme?"

"Oh, he ain't so bad, Lil, only he's kinda bigoted."

"Whadda y'mean bigoted?"

"Well, he thinks words can only be spelled one way."

BEATS ALL

The young Scotch graduate complained that his sheepskin didn't have enough meat on it.

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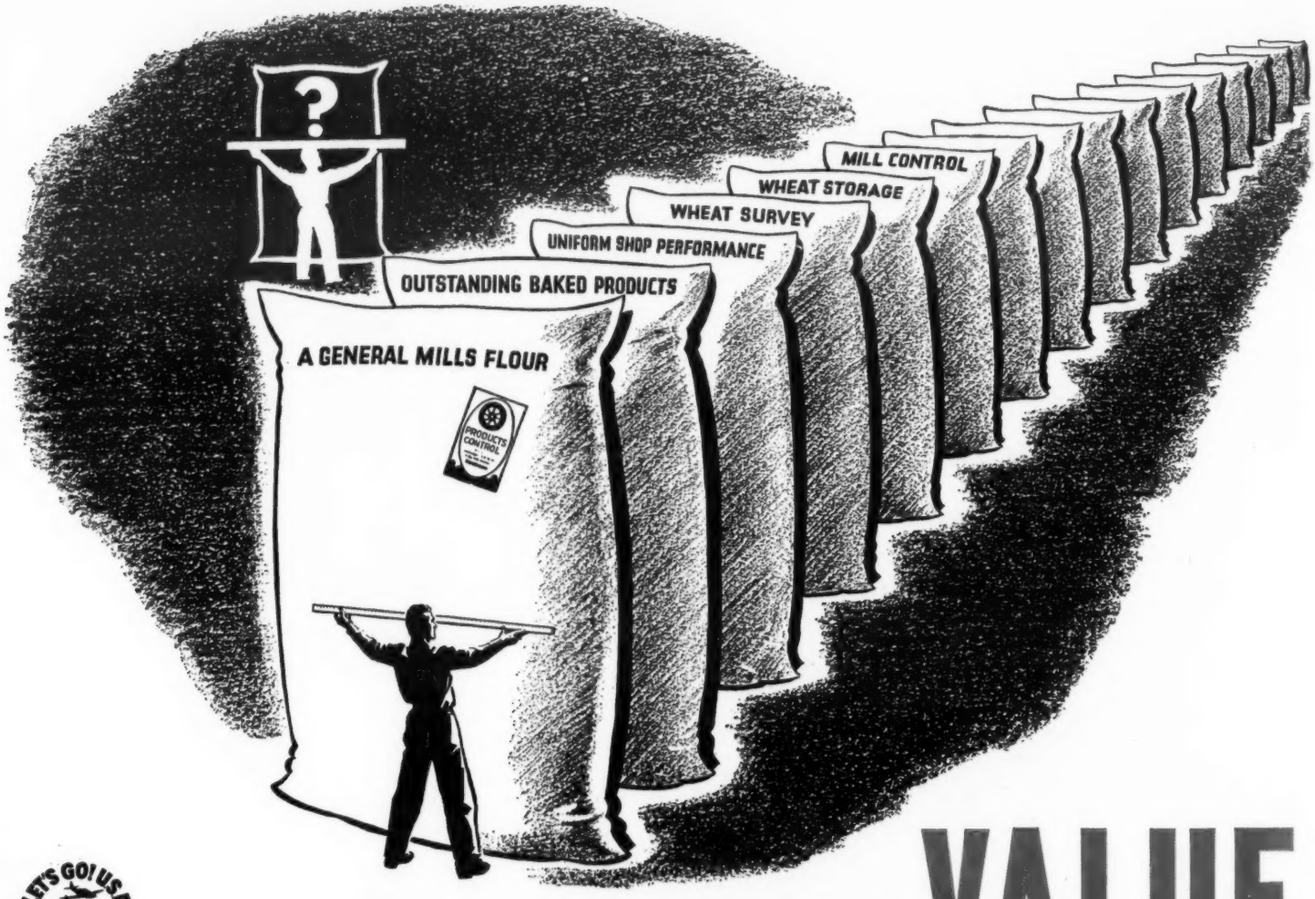

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